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**ENVIRONMENTAL INTEGRATION AND THE MULTI-FACETED INTERNATIONAL
DIMENSIONS OF EU LAW:**

UNPACKING THE EU'S 2009 CLIMATE AND ENERGY PACKAGE

Kati Kulovesi, Elisa Morgera and Miquel Muñoz.¹

INTRODUCTION

The EU Climate and Energy Package (the Package) is a comprehensive set of legal acts aimed at responding to global and European climate change and energy challenges, and integrating climate change considerations into a range of sectors and policies. The technical complexity of the Package illustrates how the body of legal norms related to climate change is expanding rapidly and becoming so specialized that many are now referring to 'climate law' as an emergent legal discipline.² Yet, the Package contains a number of elements that could have important implications for the future of the European Union (EU) and are of interest to general EU lawyers. It has been described as "a momentous development"³ whereby major and politically contentious pieces of climate and energy policy were adopted in less than a year. One of the main objectives of the Package is to steer the EU towards a fundamental transformation in the coming decades and profoundly change how the EU produces its energy and how its economy functions. The Package aims "to make the European economy a model for sustainable development in the 21st century" and "transform Europe into a low-carbon, high energy efficiency economy" in such a way that requires "major political, social and economic effort."⁴ The Package also demonstrates that climate change has come to play a central role in European integration, and in internal and external EU policies.⁵ From the EU internal point of view, the Package shifts the emphasis from the Member States to the European level in areas such as renewable energy, energy efficiency and energy-intensive industries included in the EU Emissions Trading Scheme (ETS).⁶ From the point of view of the EU external relations, the Package is closely related to the EU's efforts to play a global leadership role in the battle against climate change. This desire is reflected in the EU multilateral and bilateral external relations and the stakes are high.⁷ Through its global climate change leadership the EU has arguably enhanced the EU's legitimacy in the eyes of European citizens and third countries.⁸ Yet setbacks, such as the lack of European political dominance at the United Nations (UN) Climate Change

¹ The authors wish to thank Kasey McCall Smith for her excellent editorial assistance, and Robert Utter for commenting on an earlier draft of this article.

² For an overview of the relevant developments, see Kulovesi, "Book Review: *The International Climate Regime: A Guide to Rules, Institutions and Procedures* by Farhana Yamin and Joanna Depledge; and *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work* edited by David Freestone and Charlotte Streck", XIX *Finnish Yearbook of International Law* (2008), 389-398.

³ Jordan and Rayner, "The evolution of climate policy in the European Union: an historical overview", in Jordan et al. (Eds.), *Climate Change Policy in the European Union. Confronting Dilemmas of Mitigation and Adaptation?* (CUP, 2010), pp. 52-80 at p. 76.

⁴ Commission, "20 20 by 2020. Europe's climate change opportunity," (Communication) COM(2008)30 final, 23.1.2008, pp. 2-3.

⁵ Oberthür and Roche Kelly, "EU leadership in international climate policy: Achievements and challenges," (2008) *The International Spectator*, 35-50 at 42-43.

⁶ von Homeyer, "The evolution of EU environmental governance" in Scott (Ed.), *Environmental Protection: European Law and Governance* (OUP, 2009), pp. 1-26, p. 26.

⁷ Jordan, Huitema & Van Asselt, "Climate change policy in the European Union: An introduction," in Jordan & al. (eds.), *Climate Change Policy in the European Union. Confronting Dilemmas of Mitigation and Adaptation?* (CUP, 2010), pp. 1-26 at p. 7.

⁸ It has been argued that after the failure of the Treaty Establishing a Constitution for Europe in 2005, climate change emerged as an opportunity to enhance the EU's legitimacy and as a window of opportunity to advance both internal and external EU policy. Oberthür and Roche Kelly, cited *supra* note 5, at 42-43.

Conference in Copenhagen in 2009, are quickly interpreted as a sign of the EU's diminishing role in world affairs.⁹ Through the Package, however, the EU can be seen as exercising a "softer" strategy of leading by example that places the emphasis on domestic climate change policy as a precondition for the credibility and legitimacy of international leadership.¹⁰ At the same time, our analysis will show that the Package contains a number of elements whereby the EU attempts to influence international legal and policy developments through its internal legislation.

While the Package is thus interesting and relevant for general EU lawyers, assessing its innovations and broader implications may be a challenging task. Not only is the Package closely linked to the EU's position in the negotiations on a future international climate change regime under the United Nations Framework Convention on Climate Change (UNFCCC)¹¹ but it also embraces other intertwined international dimensions. These range from its relationship to World Trade Organization (WTO) law,¹² to the EU's negotiating position in other multilateral fora, such as under the Convention on Biological Diversity (CBD)¹³ and discussions on 'green growth' in the lead-up to the 2012 UN Conference on Sustainable Development (UNCSD), which will be held twenty years after the historical 1992 UN Conference on Environment and Development in Rio de Janeiro and is therefore known as "Rio+20."¹⁴ Against this background, this article analyzes the Package to assess the way in which the EU attempts to use its internal legislation to influence international processes, on the one hand; and, to assess the influence of international law on EU law, on the other hand. While the phenomenon of 'globalizing' EU law has not escaped the attention of political scientists¹⁵ and EU lawyers,¹⁶ we seek to draw attention to the complex interaction between the legal tools that are used to these ends: inwardly, legislative choices at the level of EU internal regulation;¹⁷ and outwardly, reliance on EU law in various multilateral fora and bilateral agreements.

⁹ Lehmann, "Fallout from Copenhagen: Has the EU lost its global relevance?", *YaleGlobalOnline*, 5 Jan. 2010, <<http://yaleglobal.yale.edu/content/fallout-copenhagen-has-eu-lost-its-global-relevance>>, accessed 21 Feb. 2011. Lehmann identifies the EU as the "major victim of Copenhagen", arguing that the Conference was a "humiliation for the EU" and a sign of its declining influence.

¹⁰ Oberthür, "EU leadership on climate change: Living up to the challenges," in European Commission, *The European Union and World Sustainable Development: Visions of Leading Policy Makers & Academics* (Office for Official Publications of the European Communities, 2008) pp. 33-43 at p. 50.

¹¹ United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 Mar. 1994) 1771 UNTS 107 (UNFCCC). These links are illustrated in Oberthür and Pallemmaerts (Eds.), *The New Climate Policies of the European Union: Internal Legislation and Climate Diplomacy* (VUB Press, 2010).

¹² Final Act of the 1986-1994 Uruguay Round of Trade Negotiations (adopted 15 Apr. 1994, entered into force 1 Jan. 1995) 1867 UNTS 14 (WTO Agreements).

¹³ Convention on Biological Diversity (adopted 5 Jun. 1992, entered into force 29 Dec. 1993) 1760 UNTS 79 (CBD).

¹⁴ The UN General Assembly, at its sixty-fourth session, adopted Resolution 64/236 (2010), convening in 2012 a United Nations Conference on Sustainable Development at the highest possible level, including Heads of State and Government or other representatives, with a two-fold focus on the "green economy" in the context of sustainable development and poverty eradication; and on the institutional framework for sustainable development.

¹⁵ Kelemen, "Globalizing European Union Environmental Policy", Princeton Annual Workshop on European Integration, 1 May 2009, <<http://www.princeton.edu/~smeunier/Kelemen.doc>> accessed 8 Nov. 2010. Kelemen mentions examples related to climate change, genetically modified organisms, trade and environment, as well as chemicals.

¹⁶ de Witte, "International law as a tool for the European Union", 5 *EUConst* (2009), 265-283.

¹⁷ See also Vedder, "Diplomacy by Directive: an analysis of the international context of the emissions trading directive" (SSRN Working Paper, SSRN-id 1477371) <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1477371> accessed 8 Nov 2010.

THE EU CLIMATE AND ENERGY PACKAGE AT A GLANCE

At the 2007 Spring European Council, EU Heads of State and Government decided to adopt an integrated approach to climate and energy policy in order to transform the EU into a low-emission and highly energy efficient economy.¹⁸ The European Council committed to the objectives of reducing greenhouse gas emissions by 20% from 1990 levels, increasing the share of renewable energy from 8,5% to 20%,¹⁹ and improving energy efficiency by 20%, all to be achieved by the year 2020.²⁰ At the same time, the European Council indicated that the EU would step up its emission reduction commitment to 30% from 1990 levels by 2020 in the context of a comprehensive international climate agreement.²¹

In January 2008, the European Commission proposed a package of measures to implement the target known as "20 20 by 2020."²² This included legislative proposals to improve the EU Emissions Trading Scheme,²³ to share emission reduction efforts-between the Member States in sectors not covered by the Emissions Trading Scheme,²⁴ to promote renewable energy²⁵ and to create a legislative framework and incentives for carbon capture and storage (CCS) in geological formations.²⁶ These measures form a coherent package commonly known as the EU Climate and Energy Package.

Details of the Package were subject to intense negotiations and political bargaining especially during the French EU Presidency in the second half of 2008. On 11-12 December 2008, the Package was considered by the European Council, where an agreement was reached by the Heads of State and Government with some important modifications to the initial proposals.²⁷ The European Parliament agreed to the Package on 17 December 2008, and the Council gave the Package the final seal by adopting the new acts on 6 April 2009.²⁸ The Package entered into force in June 2009.

The main elements of the Package were published in *OJ L* 140, 5.6.2009. They are:

- Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (hereinafter, **Renewables Directive**);²⁹
- Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community (hereinafter, **EU ETS Directive**);³⁰
- Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC (hereinafter, **Fuel Specification Directive**);³¹
- Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 (hereinafter, **CCS Directive**);³²
- Regulation (EC) No 443/2009 of the European Parliament and of the Council of 23 April 2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce carbon dioxide emissions from light-duty vehicle (hereinafter, **Passenger Car Regulation**);³³ and
- Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 (hereinafter, **Effort-sharing Decision**).³⁴

¹⁸ Presidency Conclusions of the Brussels European Council, 8-9 March 2007, 7224/1/07, at pp. 10-12 and 19-18.

The ‘environmental integration principle,’ currently found in Article 11 of the Treaty on the Functioning of the European Union (TFEU), will be used here as a lens to analyse the Package.³⁵ In this regard, both the external and internal dimensions of environmental integration will be addressed. *External* environmental integration entails that the EU environmental objectives, principles and criteria, spelt out in very broad terms in Article 191 TFEU,³⁶ are “applied” in other policy areas in the same way as they must be applied in the environmental policy: that is, that EU policy areas other than environmental protection must “pursue” the environmental objectives of the EU, “aim at” or “be based on” its environmental principles, and “take account of” its environmental criteria.³⁷ *Internal* environmental integration, in turn, entails that EU environmental law itself is to be construed and interpreted broadly, taking into consideration all of the EU environmental objectives, principles and criteria,³⁸ basically requiring a holistic approach to EU environmental law-making.³⁹

¹⁹ A number of measures to achieve the 20% energy efficiency goal had been identified previously in Commission, Action Plan for Energy Efficiency: Realising the potential, (Communication) COM(2006)545 final, 19 Oct. 2006.

²⁰ Presidency Conclusions of the Brussels European Council, 8-9 March 2007, cited *supra* note 18, at p. 12.

²¹ *Ibid.*

²² These slogans are reflected in Commission, “20 20 by 2020,” cited *supra* note 4.

²³ Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading system of the Community, COM(2008)16 final, 23 Jan. 2008.

²⁴ Proposal for a Decision of the European Parliament and of the Council on the effort of Member States to reduce their greenhouse gas emissions to meet the Community’s greenhouse gas emission reduction commitments up to 2020, COM(2008)17 final, 23 Jan. 2008.

²⁵ Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources, COM(2008)19 final, 23 Jan. 2008.

²⁶ Proposal for a Directive of the European Parliament and of the Council on the geological storage of carbon dioxide and amending Council Directives 85/337/EEC, 96/61/EC, Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC and Regulation (EC) No 1013/2006, COM(2008) 18 final, 23 Jan. 2008.

²⁷ Elements of the final compromise regarding the energy and climate change package as agreed by the European Council at its meeting on 11 and 12 December 2008, 17215/08.

²⁸ European Parliament, 17 December 2008 and Council of the European Union, 6 April 2009, 8434/09.

²⁹ [2009] OJ L 140/16.

³⁰ [2009] OJ L140/63.

³¹ [2009] OJ L140/88.

³² [2009] OJ L140/114.

³³ [2009] OJ L140/1.

³⁴ [2009] OJ L140/136.

³⁵ Art. 11 of the Treaty on the Functioning of the European Union [2010] OJ C83/47 (TFEU) reads: “Environmental protection requirements must be integrated into the definition and implementation of the Union policies and activities, in particular with a view to promoting sustainable development.” While the substance has not been changed with the Lisbon Treaty, it has been argued that the environmental integration principle is “less ‘visible’ than before” as it “sits alongside other similar provisions, for example, as to consumer protection, employment, animal welfare and discrimination.” See, Lee, “The environmental implications of the Lisbon Treaty,” 10 *Envnt. L. Rev.* (2008) 131-138, at 134.

³⁶ Art. 191(1)-(3) TFEU reads: “1. Union policy on the environment shall contribute to pursuit of the following objectives: preserving, protecting and improving the quality of the environment, protecting human health, prudent and rational utilisation of natural resources, [and] promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change. 2. Union policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Union. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay. [...]. 3. In preparing its policy on the environment, the Union shall take account of: available scientific and technical data, environmental conditions in the various regions of the Union, the potential benefits and costs of action or lack of action, the economic and social development of the Union as a whole and the balanced development of its regions.”

³⁷ Dhondt, *Integration of Environmental Protection into Other EC Policies* (Europa Law Publishing, 2003), p. 84.

³⁸ *Ibid.*, p. 179, on basis of Joined Cases C-175/98 and C-177/98, *Criminal proceedings against Paolo Lirussi and Francesca Bizzaro*, [1999] ECR I-6881; Joined Cases C-418/97 and C-419/97, *ARCO Chemie Nederland Ltd v Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer and Vereniging Dorpsbelang Hees, Stichting Werkgroep*

For present purposes, external environmental integration will be used to assess the extent to which the Package has contributed to integrating climate change concerns into non-environmental EU policies, such as energy and industrial production.⁴⁰ In that respect, the environmental integration principle should guide the enactment of EU secondary legislation: while not necessarily giving priority to the environmental protection objectives of the Treaty,⁴¹ the principle requires EU institutions to take them into account systematically in other policy areas.⁴² Internal environmental integration, in turn, will be used here to assess the extent to which the Package takes a holistic approach to environmental protection, ensuring that other sectoral environmental initiatives consider climate change implications, and at the same time, that broader environmental concerns are fully accounted for in devising and implementing climate change measures (in other words, that climate change response measures are environmentally sustainable). Internal environmental integration is gaining importance at the international level: the vast majority of multilateral environmental agreements have developed a climate change component;⁴³ while the possible negative environmental impacts of some of the proposed responses to climate change are increasingly being identified and addressed, with a view to proactively ensuring their environmental sustainability.⁴⁴

Analyzing the Package from the point of view of environmental integration is critical in the light of the enormous complexity of climate change as an environmental, economic, social and security challenge: greenhouse gas emissions are produced by a multitude of actors, from private citizens to multinational corporations, through a wide range of activities. To avoid dangerous climate change, significant climate change mainstreaming will be necessary in the coming decades. The objective of

Weurt+ and Vereniging Stedelijk Leefmilieu Nijmegen v Directeur van de dienst Milieu en Water van de provincie Gelderland, [2000] ECR I-4475; and Case C-318/98 *Criminal proceedings against Giancarlo Fornasar, Andrea Strizzolo, Giancarlo Toso, Lucio Mucchino, Enzo Peressutti and Sante Chiarcosso*, [2000] ECR I-4785, where the Court held broad interpretations of EU waste legislation.

³⁹ For a more detailed discussion, see Morgera, “An introduction to EU environmental law (from the viewpoint of international law)”, Edinburgh School of Law Working Paper (SSRN 2010), <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1711372> accessed 8 Nov 2010.

⁴⁰ Jans and Vedder, *European Environmental Law* (Europa Law, 2008), p. 17.

⁴¹ Art. 191(1) TFEU, cited *supra* note 36.

⁴² The justiciability of the environmental integration principle against the EU Institutions is discussed by Jans and Vedder, cited *supra* note 40, pp. 20-21. They conclude that “only in very exceptional cases (i.e. manifest error of appraisal) a measures will be subject of annulment because certain environmental objectives have not been taken sufficiently into account” (on the basis of Case C-341/95, *Gianni Bettati*, [1998] ECR I-4355).

⁴³ See, for instance, the Resolution on Climate Change and Migratory Species (UN Doc UNEP/CMS/Resolution 8.13, 2005) adopted by the parties to the Convention on the Conservation of Migratory Species of Wild Animals (adopted 23 Jun. 1979, entered into force 1 Nov. 1983) 1651 UNTS 333; COP Resolution X.24, “Climate Change and Wetlands” (adopted 4 Nov. 2008) by the parties to the Convention on Wetlands of International Importance especially as Waterfowl Habitat (adopted 2 Feb. 1971, entered into force 21 Dec. 1975) 996 UNTS 245; and World Heritage Committee Decision 29COM 7B.a (adopted 17 Jul. 2005) by the parties to the Convention Concerning the Protection of the World Cultural and Natural Heritage (adopted 16 Nov. 1972, entered into force 17 Dec. 1975) 1037 UNTS 151. An analysis on linkages between climate change and MEAs can be found in a forthcoming special issue of the *Global Environmental Politics*, edited by Jinnah and Muñoz, on climate change bandwagoning. See “Climate Change Bandwagoning: The Impacts of Strategic Linkages on Regime Design, Maintenance, and Death” 11(3) *Global Environmental Politics* (forthcoming 2011).

⁴⁴ Parties to the Convention on Biological Diversity have been increasingly addressing the environmental sustainability of response measures to climate change, such as ocean fertilization (for which they adopted a moratorium through COP Decision IX/16C, in 2008) and geo-engineering (for which a moratorium was adopted by the Conference of the Parties in Oct. 2010 – CBD COP decision X/33, para. 8(w)). See Morgera, “Far Away, So Close: A Legal Analysis of the Increasing Interactions between the Convention on Biological Diversity and Climate Change Law”, 2 *Climate Law* (forthcoming 2011). Generally on the biodiversity impacts of mitigation and adaptation measures, see Secretariat of the Convention on Biological Diversity, “Connecting Biodiversity and Climate Change Mitigation and Adaptation: Report of the Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change” (Technical Series, No. 41, Montreal 2009).

the Package to make “the European economy a model for sustainable development in the 21st century” and commit to an economic transformation towards a low-carbon future “requiring major political, social and economic effort,”⁴⁵ begs the question: has the Package succeeded in integrating climate change considerations into a range of key sectors, while duly considering potential negative environmental implications of climate policies?

To answer to this question, this article starts by sketching the history of EU’s climate policy and of the Package. Subsequent sections will discuss key elements of the Package, namely changes to the EU Emissions Trading Scheme (EU ETS), as well as the Effort-sharing Decision and Directives on Carbon Capture and Storage (CCS) and Renewables. Through the lens of environmental integration, the article will highlight the multifaceted international dimensions of the Package. Focusing on the interplay between internal and external environmental integration will also allow us to examine the interplay between internal regulation and the external relations of the EU. These observations pave the way for our conclusions on how the Package exemplifies the complex web of internal and external legal tools that the EU uses to pursue its climate change objectives while seeking environmental integration.

1. THE ASCENT OF EU CLIMATE POLICY

The problem of climate change (or ‘greenhouse effect’ as it was then called) was first recognised at the Community level in the late 1980s.⁴⁶ Around the same time, the Intergovernmental Panel on Climate Change (IPCC) was created in 1988, and the intergovernmental negotiation process resulting in the UNFCCC was launched in 1990.⁴⁷ During the UNFCCC negotiations, the EU already attempted to play an international leadership role and push for stringent international commitments.⁴⁸ Some of today’s motivations for this aspiration remain the same as in the early 1990s when Environment Commissioner Carlo Ripa di Meana believed that the EU’s climate change leadership would help deepen political integration within Europe and enhance the EU’s credibility overseas.⁴⁹ To boost its leadership efforts, the EU adopted an internationally ambitious target to stabilise its greenhouse gas emissions to 1990 levels by 2000.⁵⁰ Just before the 1992 UN Conference on Environment and Development in Rio de Janeiro, the Commission proposed a package of measures for the EU to achieve this stabilisation target, including: a framework Directive on energy efficiency and conservation (within the existing SAVE programme); a Decision to support the development of renewable energies (ALTENER); a Decision concerning a monitoring mechanism for carbon dioxide emissions; and a Directive to introduce a tax on the carbon/energy content of fuels.⁵¹ However, the carbon tax proposal proved too controversial for the

⁴⁵ Commission, “20 20 by 2020”, cited *supra* note 4.

⁴⁶ European Parliament, “Resolution on Measures to Counteract the Rising Concentration of Carbon Dioxide in the Atmosphere (the “Greenhouse” Effect)” [1986] OJ C255/272; Commission, Communication to the Council on the Greenhouse Effect and the Community - Commission Work Programme concerning the Evaluation of Policy Options to Deal with the Greenhouse Effect, (Communication) COM(88)656, 16 Nov. 1988; and Council, “Resolution of 21 Jun. 1989 on the Greenhouse effect and the Community” [1989] OJ C183/4. For a more detailed overview, see Mehling, “Emissions trading and national allocation in the Member States: an Achilles heel of European climate policy?”, 5 YEEL (2005), 113-156, at 119-120 and Jordan and Rayner, cited *supra* note 3.

⁴⁷ The negotiating process leading to the adoption of the UNFCCC was launched by UN General Assembly Resolution 45/212, 21 Dec. 1990. The UNFCCC was agreed in 1992 and entered into force in 1994, cited *supra* note 11.

⁴⁸ Jordan and Rayner, cited *supra* note 3, pp. 56-57, and Oberthür and Roche Kelly, cited *supra* note 5, at 36.

⁴⁹ Jordan and Rayner, cited *supra* note 3, p. 56

⁵⁰ Ibid.

⁵¹ Commission, Community Strategy to Limit Carbon Dioxide Emissions and to Improve Energy Efficiency, (Communication) COM(92)246 final, 1 June 1992; Proposal for a Council Directive to limit carbon dioxide emissions by improving energy efficiency (SAVE programme), COM(92)182 final, 26 June 1992; Proposal for a Council Decisions for a monitoring mechanism of Community CO₂ and other greenhouse gas emissions, COM(92)226 final, 30 June 1992; and Proposal for a Council Directive Introducing a Tax on Carbon Dioxide Emissions and Energy, COM(92) 226 final, 26 June 1992;

Member States and the Commission's proposed package fell apart, leaving the EU to travel to Rio with no internal policies and measures to deliver its stabilisation target.⁵² After the adoption of Agenda 21⁵³ and the UNFCCC in Rio, the EU included climate change as one of seven themes in the 1993 Fifth Environment Action Programme.⁵⁴ The Renewable Energy Decision was also adopted in 1993 but with more modest targets and less funding than the Commission had originally hoped for.⁵⁵ EU-level action on energy efficiency also proved controversial with Member States insisting on more subsidiarity, and ultimately, no quantitative targets were set and detailed requirements on cars, homes and businesses were taken out.⁵⁶

In light of the failure of the carbon tax proposal, it has been argued that "internal climate policy discussions within the EU would probably have remained dormant" had the EU not committed itself in Rio to hosting the first Conference of the Parties (COP) of the UNFCCC in Berlin in March 1995.⁵⁷ Presiding over the Conference, Germany, which also held the Presidency of the Council, managed to convince the UNFCCC Parties to launch a new negotiating process leading to the adoption of the Kyoto Protocol in 1997.⁵⁸ To boost the Kyoto negotiations, the Environment Council agreed in June 1996 to seek "significant overall reductions" in emissions after 2000 and indicated, for the first time that "global average temperatures should not exceed 2 degrees above pre-industrial level."⁵⁹ The 2°C target remains the cornerstone of the EU climate policy and has recently been adopted internationally under the UNFCCC as a benchmark for dangerous climate change.⁶⁰ However, information since 1996 shows, on the one hand, that staying below 2°C will be difficult (but not impossible or very costly)⁶¹ and that limiting global average temperature increase to 2°C from pre-industrial times is probably not enough to prevent dangerous climate change, on the other hand.⁶²

After the adoption of the Kyoto Protocol, the EU negotiated an internal agreement on how to distribute its collective Kyoto target of reducing emissions by 8% from 1990 levels in 2008-2012 between the then 15 Member States.⁶³ Steps were also taken to identify ways to implement the Kyoto target and set up the EU's internal emissions trading scheme.⁶⁴ In 2000, the Commission launched the European Climate Change Programme; in 2002, climate change was upgraded to one

⁵² Jordan and Rayner, cited *supra* note 3, pp. 58-59.

⁵³ Agenda 21 – Global Programme of Action on Sustainable Development, UN Doc. A/CONF.151/26/REV.1, vols. I – III, 3 – 14 Jun. 1992 (Agenda 21).

⁵⁴ Council and the Representatives of the Governments of the Member States, "Towards Sustainability" [1993] OJ C138/1, at 42.

⁵⁵ Jordan and Rayner, cited *supra* note 3, p. 60.

⁵⁶ *Ibid.*, p. 60.

⁵⁷ *Ibid.*, p. 61. For analysis of European climate policy before UNFCCC COP 1, see also Grubb, "European Climate Change Policy in a Global Context", in Bergesen et al. (Eds.), *Green Globe Yearbook of International Cooperation on Environment and Development* (OUP, 1995), pp. 41-50.

⁵⁸ Jordan and Rayner, cited *supra* note 3, p. 62.

⁵⁹ Council (EU), Conclusions of the 1939th Environment Council Meeting, 25 and 26 June 1996, Brussels, PRES/96/188.

⁶⁰ UNFCCC Decision 1/CP.16, *Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention*, advance unedited version,

<http://unfccc.int/files/meetings/cop_16/application/pdf/cop16_lca.pdf>, accessed 21 Feb. 2011, para. 4. The text provides for a review of the 2°C target in light of best available science, including in relation to a 1.5°C target.

⁶¹ Metz, *Controlling climate change* (CUP, 2010), pp. 74-75.

⁶² Hansen & al. "Target atmospheric CO₂: Where should the humanity aim?," 2 *Open Atmos. Sci. J.* (2008), 217-231.

⁶³ The so-called 'burden-sharing' agreement from 1998 was adopted in a legally-binding form through the Council decision of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfillment of commitments thereunder [2002] OJ L130/1 at 1-3.

⁶⁴ Commission, Climate change: Towards an EU post-Kyoto strategy, (Communication) COM(98)353 final, 3 June 1998.

of four priority action areas in the Sixth Environment Action Programme,⁶⁵ and in 2003, the EU Emissions Trading Scheme (ETS) was launched.⁶⁶

The EU has progressively elevated climate change as a priority in its overall agenda on sustainable development and international cooperation, building upon the UN-driven inclusion of climate change among key threats to global security.⁶⁷ The high priority given to climate change is now reflected in the TFEU, which highlights climate change among the global environmental issues for which the EU is expected to play a critical role at the international level.⁶⁸ Reading this provision together with the environmental integration requirement points to an obligation to mainstream climate change in all EU policy areas.⁶⁹

The importance of climate change is also reflected in key institutional developments, such as the increasing involvement of the European Council in climate change decision-making, thus confirming climate change as a high-level political issue for the EU Heads of State and Government.⁷⁰ It remains unclear whether the securitization of climate change⁷¹ will also lead to an involvement in climate politics of the High Representative of the EU for Foreign Affairs and Security Policy,⁷² although the European Parliament has already made such a recommendation.⁷³ It should also be highlighted that within the Commission, a separate Directorate-General (DG) for climate change issues (DG-CLIMA) was created in early 2010, incorporating activities formerly in the DG Environment, DG External Relations and DG Enterprise and Industry.⁷⁴ From the perspective of *internal* environmental integration, the separation of climate change from other environmental issues would, at a first glance, seem to risk the development of holistic environmental policies. Lee, for instance, has highlighted concerns that “[p]icking one environmental problem (however serious) has to raise certain concerns about ongoing efforts to take a more holistic, integrated and sophisticated approach to environmental governance.”⁷⁵ On the other hand, based on the principle of collegiality within the Commission, proposals from the new DG-

⁶⁵ Parliament and Council Decision 1600/2002/EC laying down the Sixth Community Environment Action Programme, [2002] OJ L242/15.

⁶⁶ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community, [2003] OJ L 275/32.

⁶⁷ Morgera and Marín Durán, “The UN 2005 World Summit, the environment and the EU: priorities, promises and prospects”, 15 *RECIEL* (2006), 1-18.

⁶⁸ With the Lisbon Treaty, Art. 191(1) TFEU, cited *supra* note 36, contains new language highlighting the importance of climate change for the EU external relations and now concludes with reference to “in particular combating climate change.”

⁶⁹ Morgera, “Relevance beyond borders: recent developments in the EU”, 40 *Environmental Policy and Law* (2010) 234-236.

⁷⁰ Roche Kelly, Oberthür and Pallemmaerts, “Introduction” in Oberthür and Pallemmaerts (Eds.), cited *supra* note 11, pp. 11-25, p. 13; and Skjaereth and Wettstad, “The EU emissions trading system revised (Directive 2009/29/EC)” in Oberthür and Pallemmaerts (Eds.), cited *supra* note 11, pp. 65-91, p. 74, 83. This seems to have resulted in a “record-speed legislative process” for the Package, see Oberthür and Pallemmaerts, “The EU’s internal and external climate policies: a historical overview” in Oberthür and Pallemmaerts (Eds.), cited *supra* note 11, pp. 27-63, p. 47; and also Skjaereth and Wettstad, see this note, p. 83.

⁷¹ Commission, “Climate Change and International Security” (Paper from the High Representative and the European Commission to the European Council, S113/08) 14 Mar. 2008.

⁷² van Schaik, “The sustainability of the EU model for climate diplomacy” in Oberthür and Pallemmaerts (Eds.), cited *supra* note 11, pp. 251-280, at pp. 270-273; see also van Schaik and Egendorfer, “Improving the climate: will the new Constitution strengthen the EU’s performance in international climate negotiations?” (Centre for European Policy Studies, Policy Brief No. 63/February, Brussels, 2005).

⁷³ The European Parliament called on the EU’s High Representative and the Commissioner responsible for climate action to lead a new “climate diplomacy” in the resolution on the outcome of the Copenhagen Conference on Climate Change (10 Feb. 2010), para 7.

⁷⁴ “Commission creates two new Directorates-General for Energy and Climate Action” (Europa Rapid Press Release) IP 10/164, 17 Feb. 2010.

⁷⁵ Lee, “Environmental implications of the Lisbon Treaty”, cited *supra* note 35, at 133.

CLIMA are now subject to formal scrutiny by DG Environment: DG Environment is now in a better position to raise concerns over the environmental implications of the EU's climate policies in the form of an objection.⁷⁶ Furthermore, the new developments can be interpreted more positively in terms of external environmental integration, as leading to a "new phase in environmental governance in the EU," where climate change as a 'high politics' environmental issue will bear considerable potential for "mutual integration of climate change concerns with energy and security policy."⁷⁷

As already mentioned above, the ascent of EU's climate change policy legislation has been closely linked to the EU's desire to play an international leadership role in the fight against climate change. In addition to advocating a stringent international response during the negotiations for the UNFCCC, the EU also advocated stronger emission reduction targets than other developed countries during the negotiations for the Kyoto Protocol.⁷⁸ The collective Kyoto target by the EU-15 to reduce emissions by 8% from 1990 levels is also higher (but not necessarily more difficult to implement) than the targets assumed by other developed countries. A key step towards the EU's global climate leadership was taken in May 2002 when the then European Community and its Member States ratified the Kyoto Protocol,⁷⁹ a particularly significant move coming a year after the US announced that it would not be ratifying the Protocol.⁸⁰ The EU subsequently sought to show its leadership by creating the ETS when the future of the Kyoto Protocol was still hanging in balance,⁸¹ and used its political clout to secure the Protocol's entry into force.⁸²

The Climate and Energy Package can be seen as yet another attempt by the EU to 'lead by example' at a time when both the legal shape and details of future international climate change cooperation under the UNFCCC remain undecided. The adoption of the politically controversial Package in less than a year can in fact be understood against the EU's desire for a comprehensive international agreement at the historic 2009 UN Climate Change Conference in Copenhagen where nearly 120 Heads of State and Government participated.⁸³ It has been argued that the "momentous development" of adopting the Package was possible because all the relevant actors seemed to ultimately accept that "EU international credibility and prospects for a deal at Copenhagen depended on the package being adopted in its entirety."⁸⁴ The Copenhagen Conference failed to meet most expectations and, after a record-long and acrimonious debate, the Conference resulted only in a decision to "take note" of the Copenhagen Accord negotiated by a small group of world leaders and civil servants.⁸⁵ In the aftermath of Copenhagen, the EU's global climate leadership was

⁷⁶ On the procedures for collegiate decision-making within the Commission, see Chalmers et al., *European Union Law* (CUP, 2010), pp. 55-56.

⁷⁷ von Homeyer, cited *supra* note 6, p. 26.

⁷⁸ Oberthür and Roche Kelly, cited *supra* note 5, at 36.

⁷⁹ Council Decision 2002/358/EC concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the UNFCCC and the joint fulfillment of commitments thereunder, [2002] OJ L130/1.

⁸⁰ On the US announcement and the Protocol's birthing difficulties, see Kulovesi, "How to prevent babies from being thrown away with the bathwater: Perspectives on the international climate regime from Buenos Aires to the future" in Morgera and Francioni (Eds.), *The Future of Environmental Law: International and European Perspectives* (The Working Group on Environmental Law: Collected Reports 2004 – 2005), EUI Working Papers Law, Law No. 2006/01, 22-27, at 23. <<http://cadmus.eui.eu/dspace/bitstream/1814/4083/1/WPLAWNo.20061ELWG.pdf>> accessed 21 Feb. 2011.

⁸¹ Ellerman, Convery and de Perthuis, *Pricing Carbon. The European Union Emissions Trading Scheme* (CUP, 2010), pp. 28, 18-19.

⁸² Kulovesi, cited *supra* note 80, 23-24.

⁸³ Commission, "Towards a comprehensive climate change agreement in Copenhagen" (Communication) COM(2009) 39 final, 28 Jan. 2009.

⁸⁴ Jordan and Ryner, cited *supra* note 3, p. 76.

⁸⁵ On the Copenhagen outcome, see, for example, "Summary of the Copenhagen Climate Change Conference", 12(459) *The Earth Negotiations Bulletin* (22 Dec. 2009); Rajamani, "The Making and Unmaking of the Copenhagen Accord", 59 *ICLQ* (2010), 824-843; Bodansky, "The Copenhagen Climate Change Conference: a post-mortem", 104(2) *AJIL*

questioned as EU leaders found it impossible to convince other key players, such as the US and China, to agree on an ambitious climate agreement.⁸⁶ However, the UNFCCC negotiating process continues and has subsequently delivered some more positive results.⁸⁷

For our analysis, the Copenhagen experience highlights that ‘soft’ global climate leadership, including leadership by example⁸⁸ - of which the Package is a glaring example – is probably the best and most viable option for the EU. Unlike other international players, the EU has already in place the regulatory framework to implement key aspects of its climate policy beyond the Kyoto Protocol’s first commitment period, ending in December 2012. It is useful to note, however, that the EU’s unilateral emission reduction objective of 20% by 2020 underlying the Package can be criticised as not being ambitious enough to limit temperature increase to below 2°C.⁸⁹ After the 2009 UN Climate Change Conference in Copenhagen failed to bring conclusive results, the EU has engaged in an internal debate on whether to increase its mid-term emission reduction target to 30%, which is backed, *inter alia*, by Germany, France and the UK.⁹⁰ The higher target would be more compatible with the requirements of climate science but the EU has thus far made it conditional on the adoption of a comprehensive international climate treaty.⁹¹ In May 2010, the Commission issued a communication on possible new policies and measures that would need to be added to the Package to achieve the 30% target by 2020.⁹² As of February 2011, the issue remains controversial⁹³ and experts do not believe that the EU will reach a decision on the issue before the next round of UNFCCC negotiations in South Africa in late 2011 and before the Danish EU Presidency in 2012.⁹⁴

While showing leadership in the international climate change negotiations has been a prominent driver for the adoption of the Package, it was not the only one. The Package responds to multiple concerns within the EU, from energy security⁹⁵ and long-term economic competitiveness, to trade

(2010), 230-240; Müller, “Copenhagen 2009, failure or final wake-up call for our leaders” (Oxford Institute for Energy Studies EV 49, Feb. 2010); Meilstrup, “The Runaway Summit: The Background Story of the Danish Presidency of COP 15, the UN Climate Conference,” in *Danish Foreign Policy Yearbook* (2010) 113-135, <http://www.diis.dk/graphics/Publications/Books2010/YB2010/YB2010-Runaway-summit_WEB.pdf>, visited 21 Feb 2011.

⁸⁶ On the EU’s role in Copenhagen, see: Kleine-Brockhoff, “Lessons of a memorably chaotic global gathering” *The Financial Times*, 21 Dec. 2009; Kanter, “EU blames others for ‘Great Failure’ on climate”, *The New York Times*, 22 Dec. 2009.

⁸⁷ UNFCCC Decision 1/CP.16, cited *supra* note 60.

⁸⁸ On the need for such strategy before Copenhagen, see Oberthür and Roche Kelly, cited *supra* note 5.

⁸⁹ According to the Fourth Assessment Report by the Intergovernmental Panel on Climate Change, developed countries should collectively reduce their emissions by 25-40% from 1990 levels by 2020 to have a reasonable probability of limiting global average temperature increase to below 2°C from pre-industrial times. See, Metz and al. (Eds.), *Climate Change 2007: Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (CUP, 2007), Box 13.7 at p. 776. The EU’s 20% target is therefore not compatible with the Fourth Assessment Report and subsequent studies calling for even deeper emission cuts, such as Hansen & al, cited *supra* note 62.

⁹⁰ The relevant ministers from Germany, France and UK advocated their position and its positive economic implications in an opinion piece in the *Financial Times*. See Hühne, Röttgen & Borloo, “Europe needs to reduce emissions by 30%”, *The Financial Times*, 14 July 2010.

⁹¹ Council (EU), Conclusion on the preparation for the 16th session of the Conference of the Parties to the UN Framework Convention on Climate Change, 29 November – 10 December 2010” (3036th Environment Council Meeting, Luxembourg, 14 October 2010).

⁹² Commission, “Analysis of options to move beyond 20% greenhouse gas emission reductions and assessing the risk of carbon leakage” (Communication) COM(2010) 265 final, 26 May 2010.

⁹³ The issue is controversial both among the Member States and within the Commission. While DG-CLIMA supports the higher target, Energy Commissioner Günther Oettinger has argued that if the EU goes “alone to 30%, you will only have a faster process of de-industrialisation in Europe”. See, “30% greenhouse gas emission cut still on the table”, EurActive, 14 Feb. 2011, <<http://www.euractiv.com/en/climate-environment/30-greenhouse-gas-emissions-cut-table-news-502133>>, accessed 21 Feb. 2011.

⁹⁴ Schjolset, “Will it be late or never for the 30% EU target?”, 9(42) *Carbon Market Europe*, 22 Oct. 2010.

⁹⁵ van Schaik, cited *supra* note 72, p. 264.

and development cooperation.⁹⁶ The basic philosophy underlying the Package is that climate change objectives can be achieved while continuing to pursue economic prosperity and job-creation within the EU.⁹⁷ The Package seeks “to put Europe on the road to the future” and ensure that by the year 2050, Europe will look “very different” in terms of supplying its energy needs.⁹⁸ According to the Commission, therefore, the transition to a low-carbon future can be achieved while continuing to pursue economic growth.⁹⁹ The EU climate policy goals also significantly shaped the recent “Europe 2020 Strategy” for smart, sustainable and inclusive growth.¹⁰⁰ The EU target for a green economy reiterates the EU “20 20 by 2020” climate change target, and the concept of “resource-efficient” Europe entails decoupling growth from the use of resources, shifting towards a low-carbon economy, increasing the use of renewables, modernizing the transport sector and promoting energy efficiency.¹⁰¹

Finally, climate change is also playing an increasingly visible role in the EU’s bilateral external relations with a view to supporting the EU’s role as leader at the multilateral level.¹⁰² In the wake of the UN Climate Change Conference in Copenhagen, for instance, the European Parliament adopted a resolution calling for mainstreaming climate change in the EU’s bilateral external relations.¹⁰³ In the second revision of the Cotonou Agreement – the world’s largest economic and political framework for North-South cooperation, involving seventy-nine African, Caribbean and Pacific (ACP) countries – the EU and ACP countries recognize for the first time the global challenge of climate change as a major subject for their partnership, committing to raise the profile of climate change in their development cooperation, and to support ACP countries’ mitigation and adaptation efforts.¹⁰⁴ The following sections will also highlight how the EU’s bilateral external efforts to build consensus on climate change issues are linked with the EU’s position at the multilateral level and certain elements of the Package. The Europe 2020 strategy further confirmed this trend, by expressing the intention to increase the EU’s outreach on the bilateral level with a view to building mutual understanding with third countries in the search of a global solution to climate change through the proposed use of “regulatory dialogues” with partner countries in order to promote equivalence, mutual recognition and convergence in green growth and climate change regulatory approaches and tools, and the use of “high-level strategic dialogues” on energy and climate.¹⁰⁵

2. UNPACKING THE PACKAGE

Looking at the Package through the lens of the environmental integration principle, the very fact that the EU decided to adopt a ‘package’ of legislative measures that jointly address climate change

⁹⁶ *Ibid.*, p. 266.

⁹⁷ Commission, “20 20 by 2020”, cited *supra* note 4.

⁹⁸ *Ibid.*

⁹⁹ *Ibid.*

¹⁰⁰ Commission, “Europe 2020: A strategy for smart, sustainable and inclusive growth”, (Communication) COM(2010)2010 final, 3 Mar. 2010; and European Council, Conclusions of 17 June 2010, EUCO 13/10.

¹⁰¹ COM(2010)2010, cited *supra*, at p. 4.

¹⁰² Morgera, “Relevance Beyond Borders,” cited *supra* note 69.

¹⁰³ European Parliament Resolution on the outcome of the Copenhagen Conference on Climate Change, 10 Feb. 2010, para. 7, <<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2010-0019+0+DOC+XML+V0//EN>> accessed 21 Feb. 2011. The European Parliament “urged the EU to agree on a ‘Roadmap for Mexico’ which will include the discussion of climate policies in every strategic partnership and bilateral and multilateral cooperation agreement in order to create a more coherent external climate protection strategy.”

¹⁰⁴ “Renewed impetus in the fight against poverty: EU and ACP states initial revised Cotonou Partnership Agreement” (Press Release), 19 Mar. 2010, <http://europa-eu-un.org/articles/en/article_9596_en.htm> accessed 21 Feb. 2011. See also, Second revision of the Cotonou Agreement – agreed consolidated text, (11 Mar. 2009), preambular para 13bis and Arts. 1, 11(1), 20(2), 29(3)(a) and 32 bis – the latter is a whole new article devoted specifically to climate change cooperation, <http://ec.europa.eu/development/icenter/repository/second_revision_cotonou_agreement_20100311.pdf> accessed 21 Feb. 2011.

¹⁰⁵ COM(2010) 2010, cited *supra* note 100, pp. 21-22.

and energy points towards a comprehensive and highly integrated approach. In many respects the Package includes innovative legal measures that support not only climate change mainstreaming (external environmental integration), but also the environmental sustainability of proposed climate change measures (internal environmental integration). In addition, the Package seeks to ensure its own ‘normative integration’¹⁰⁶ into the crowded realm of existing EU environmental legislation by explicitly clarifying linkages with other relevant EU legislation and building upon certain pre-existing climate and energy initiatives, modifying some and implicitly ensuring the continuance of others.

Before proceeding to analyse the Package, we will take a closer look at its key components.¹⁰⁷ First, the Package contains a Directive extending and revising the EU ETS from 2013 onwards. The EU ETS is the flagship of the EU’s climate policy, capping greenhouse gas emissions from energy intensive industrial sectors and currently covering approximately 40% of the EU’s total greenhouse gas emissions. The EU ETS Directive is complemented by the Effort-sharing Decision, which introduces binding emission targets for each Member State for 2013-2020 in sectors not included under the ETS, including transport, buildings, agriculture and waste. The Package also comprises the CCS Directive, which regulates the controversial climate change mitigation technology of carbon capture and storage (CCS) in geological formations for the first time in the EU, and creates incentives for pilot activities. The Package also includes the Renewables Directive which, also for the first time, addresses jointly all forms of renewable energy. It aims to increase the share of renewable energy to 20% of the EU’s overall consumption and to 10% of transport petrol and diesel consumption by the year 2020.¹⁰⁸ The Renewables Directive also includes unprecedented sustainability criteria for biofuels, and is, in this respect, linked to the Fuel Specification Directive, which was amended as a part of the Package with a view to facilitating the more widespread blending of biofuels into petrol and diesel.

Energy efficiency is the third pillar of the EU’s climate policy. The EU seeks to reduce its primary energy use by 20% by 2020 compared to the business-as-usual projections. It has been estimated that measures to improve energy efficiency will lead to significant and cost-effective greenhouse gas emission reductions by 2020, thereby directly contributing to the objectives of the Package.¹⁰⁹ The key element targeting energy efficiency in the Package is the Passenger Car Regulation, which aims to reduce greenhouse gas emissions from transport by setting the first legally-binding fleet standards for carbon dioxide emissions from new passenger cars. The Regulation requires car manufacturers to achieve average fleet emissions of 130 grams of carbon dioxide per kilometre in 2015.¹¹⁰ Falling technically outside the Package, a number of other measures have been adopted to

¹⁰⁶ This concept is different from the requirement of environmental integration enshrined in Art. 11 TFEU. Normative integration simply refers to a legislative technique of ensuring clarity in the relationship between different relevant legal instruments. For an application in the area of EU water law, see Grimeaud, “The EC Water Framework Directive – an instrument for integrating water policy”, 13 *RECIEL* (2004), 27-39.

¹⁰⁷ For legislative history and official name of the various instruments, see text box “The EU Climate and Energy Package at a Glance” above.

¹⁰⁸ This target is often misrepresented as a 10% target for *biofuels* but the target in, in reality, a target for *renewable energy* in the transport sector. The confusion stems from the European Council of March 2007 endorsement of a mandatory minimum 10% target of biofuels in transport. However, during the formulation of the Package, that target became a 10% renewable energy in transport (see Directive 2009/28/EC, cited *supra* note 29, preambular paras. (9) and (18), and art. 3(4)).

¹⁰⁹ The target to enhance energy efficiency by 20% by 2020 and the Commission’s proposals for related measures can be found in Commission, Action Plan for Energy Efficiency, cited *supra* note 19. See also Commission, “Energy efficiency: Delivering the 20% target”, (Communication) COM(2008)772 final, 13 Nov. 2008.

¹¹⁰ See the Passenger Car Regulation, cited *supra* note 33. It is interesting to note that the EU’s voluntary agreements concluded with the car industry in 1998 failed to achieve the agreed targets. The final compromise adopted as a part of the Package provides, *inter alia*, for “volume phase-in,” meaning that in 2012-2014, the target applies only to a

enhance energy efficiency by 20% by 2020.¹¹¹ In addition to these key elements, the Package also includes amended guidelines on state aid for environmental measures, which were adopted by the Commission in 2008.¹¹² While this article does not address the guidelines, they are certainly important in facilitating Member State action and make an interesting case study for analysing environmental integration in EU competition law. Turning now to the environmental integration and international dimensions of the key elements of the Package, the EU ETS Directive will be addressed first.

3. THE EU ETS

The EU ETS is the world's most important greenhouse gas emissions trading scheme.¹¹³ It is a cap-and-trade scheme, covering more than 10,000 operators during the ongoing second trading period. By creating a price for greenhouse gas emissions in energy-intensive sectors, the EU ETS has attempted to integrate climate change considerations into the strategic thinking of the covered economic actors and create an incentive for them to start investing in low-carbon technologies.¹¹⁴ Having internalized some climate change costs into sectors such as power generation, iron and steel, oil refineries, cement and other building materials, as well as pulp and paper, the ETS can also be seen as a critical tool for implementing the external dimension of the environmental integration principle.¹¹⁵ All this is in line with messages from the IPCC's Fourth Assessment Report and the Stern Review of the Economics of Climate Change that introducing a price for greenhouse gas

proportion of the manufacturers' cars during the first year. It also provides for reduced excess emission premiums.

There is also a long-term objective to reach 95 grams per kilometer by 2020, to be reviewed in 2013.

¹¹¹ Several Directives and Regulations pre-dating the Package aimed to improve energy efficiency. One of them was Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directives 96/57/EC and 2000/55/EC of the Parliament and the Council, [2005] OJ L191/29 (the Ecodesign Directive). In March 2009, the Commission adopted a Regulation under the Eco-Design Directive to gradually phase out the traditional incandescent light bulbs and replace them with fluorescent light bulbs that use 65-80% less energy, see Commission Regulation (EC) No 244/2009 of 18 March 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for non-directional household lamps, [2009] OJ L76/3. The Ecodesign Directive was amended and recast in 2009, see Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing the framework for the setting of ecodesign requirements for energy-related products, [2009] OJ L285/10. In 2009-2010, measures were passed known as the "energy efficiency package," and included: Parliament and Council Regulation (EC) 1222/2009 (25 Nov. 2009) on the labeling of tires with respect to fuel efficiency and other essential parameters, [2009] OJ L342/46; Parliament and Council Directive 2010/31/EU (19 May 2010) on the energy performance of buildings [2010] OJ L153/13; and Parliament and Council Directive 2010/30/EU (19 May 2010) on the indication by labeling and standard product information of the consumption of energy and other resources by energy-related products, [2010] OJ L153/1.

¹¹² Oberthür and Pallemmaerts, "The EU's internal and external climate policies: a historical overview," cited *supra* note 70, p. 47. Commission, "Community guidelines on State aid for environmental protection" (Notice) 2008/C 82/01 [2008] OJ C82/1. See also "State aid: guidelines on state aid for the environment – frequently asked questions" (Europa Rapid Press Release) MEMO/08/31, 23 Jan. 2008.

¹¹³ The EU ETS estimated value was €63 billion of the overall €86 billion value of the global carbon market in 2008.

"Executive Summary" in Capoor and Ambrosi, *State and Trends of the Carbon Market 2009* (The World Bank, 2009), 1-2.

¹¹⁴ A critical assessment maintains that the EU ETS has locked-in current emissions and provided incentives for industries not to reduce (and even increase) their emissions. Sandbag, *Cap or trap? How the EU ETS risks locking-in carbon emissions* (September 2010) < http://www.sandbag.org.uk/site_media/pdfs/reports/caportrap.pdf>, accessed 21 Feb. 2011.

¹¹⁵ The ETS Directive lists all six greenhouse gas covered by the Kyoto Protocol in accordance with its Annex A, namely carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbonds and sulphur hexafluoride. During the first two trading periods, the ETS has focused on carbon dioxide emissions from electricity generators, other combustion installations, mineral oil refineries, iron and steel production and processing, cement and lime, glass and ceramics, as well as the pulp and paper sector. From 2013 onwards, the ETS will also cover: carbon dioxide emissions from the production of bulk organic chemicals and non-ferrous metals; perfluorocarbons and carbon dioxide emissions from the aluminium sector; and carbon dioxide and nitrous oxide emissions from the production of nitric, adipic, glyoxal and glyoxylic acid. Member States can unilaterally include additional activities and gases, subject to approval by the Commission.

emissions is one of the most effective ways to mitigate climate change.¹¹⁶ The EU has also been hoping that the ETS would inspire other countries to establish similar trading schemes and that the carbon market would expand through interlinked emissions trading schemes, first within countries belonging to the Organization for Economic Cooperation and Development (OECD) and later also including other major economies.¹¹⁷ This section begins with a brief overview of the ETS and the key reforms introduced by the Package. It then analyses the ETS in the international context, focusing on its relevance for the EU's climate change leadership and its relationship with international law, including the UNFCCC and the WTO.

A. Overview of the EU ETS

The ETS marked an important shift in the EU's attitude towards carbon trading. During the Kyoto Protocol negotiations in 1995-1997, the EU and developing countries were critical of market mechanisms and stressed the need for domestic emission reductions in developed countries.¹¹⁸ Carbon trading was advocated by the US and other developed countries in the negotiating coalition known as the Umbrella Group.¹¹⁹ As part of the final deal, carbon trading was included in the Protocol through three flexibility mechanisms: the Clean Development Mechanism (CDM), Joint Implementation (JI) and international emissions trading.¹²⁰ The key motivation was cost-effectiveness: only developed countries (known as Annex I countries) are required to reduce their greenhouse gas emissions under the Kyoto Protocol. This is in line with the principle of common but differentiated responsibilities and respective capabilities, which is found in Article 3.1 of the UNFCCC and forms one of the cornerstones of the UN climate regime.¹²¹ Developed countries are also historically responsible for the remarkable increase in greenhouse gases concentrations since the industrial revolution. However, the cheapest mitigation opportunities can be found in developing countries and in countries with economies in transition to a market economy. The flexibility mechanisms thus make the implementation of the Kyoto Protocol more cost-effective: developed countries can purchase carbon credits to comply with their Kyoto targets. International emissions trading under the Kyoto Protocol takes place between two countries exchanging a part of their emissions 'quota' (or Assigned Amount) under the Kyoto Protocol. JI and CDM are known as project-based mechanisms and they generate transferable carbon credits from climate-friendly projects. JI operates in developed countries with emission targets under the Kyoto Protocol, while the CDM focuses on projects implemented in developing countries.

Following the adoption of the Kyoto Protocol, the EU weighed the pros and cons of emissions trading¹²² and in 2000, the Commission's Green Paper implied that a Community-wide emissions

¹¹⁶ "Summary for Policymakers" in Pachauri and Reisinger (Eds.), *Climate Change 2007. Synthesis Report. A Report by the Intergovernmental Panel on Climate Change* (CUP, 2007), p. 18; Stern, *The Economics of Climate Change. The Stern Review* (CUP, 2006), p. 349.

¹¹⁷ Commission, "EU Action Against Climate Change. The EU Emissions Trading Scheme", <http://ec.europa.eu/clima/policies/ets/index_en.htm>, accessed 21 Feb. 2011.

¹¹⁸ Lutken and Michaelowa, *Corporate Strategies and the Clean Development Mechanism. Developing Country Financing for Developed Country Commitments?* (Edward Elgar, 2008), pp. 4-8.

¹¹⁹ Ibid.

¹²⁰ The flexibility mechanisms are based on Article 6 (JI), Article 12 (CDM) and Article 17 (emissions trading) of the Protocol to the UN Framework Convention on Climate Change, opened for signature 11 December 1997, 37 ILM (1998) 22 (entered into force 16 February 2005), Art. 2(3) (Kyoto Protocol).

¹²¹ Article 3.1. of the UNFCCC provides that "The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, developed country Parties should take the lead in combatting climate change and the adverse effects thereof." For discussion, see Rajamani, *Differential Treatment in International Environmental Law* (OUP, 2006).

¹²² Commission, "Preparing for implementation of the Kyoto Protocol" (Communication) COM(1999)230 final, 19 May 1999 and Commission, "Emissions trading within the European Community" (Green Paper) COM(2000)87 final, 8 Mar. 2000.

trading scheme would be established.¹²³ The ETS currently applies to the 27 EU Member States, Norway, Liechtenstein and Iceland. Operators covered by the ETS must hold a permit to engage in activities covered by the EU ETS Directive. A competent national authority issues the permit after it is satisfied that the operator is capable of monitoring and reporting its greenhouse gas emissions.¹²⁴ Each year, operators must surrender allowances (EU Allowances, EUAs) corresponding to their monitored and verified greenhouse gas emissions during the previous year. Operators whose emissions are below their quota may sell their excess allowances. In contrast, operators whose emissions exceed their quota must purchase allowances to cover their excess emissions. A failure to surrender allowances results in a penalty of €100 per EUA. Each Member State has a national registry, in other words, an electronic database where the creation, transfer and surrender of EUAs are registered. There have been some considerable security problems with the national registries and, for instance, spot trading in EUAs (i.e. for immediate delivery) was suspended in early 2011 as hackers managed to steal EUAs worth millions of Euros from certain national registries.¹²⁵ The Package contains provisions for the future centralization of the ETS operations into a single European Union registry that will be operated by the Commission and replace the national registries currently operated by each Member State.¹²⁶ The move towards a centralized system should make it easier to ensure that adequate security requirements are put in place for the ETS registry.

The first trading period of the ETS ran from 2005 to 2007, as a “learning-by-doing” phase, with a focus on setting up the necessary institutions and procedures.¹²⁷ The current second trading period, 2008-2012, runs in parallel with the first commitment period under the Kyoto Protocol and plays an important role in ensuring that the EU and its Member States comply with their Kyoto target.¹²⁸ The third trading period of the ETS - as amended through the Package - will take place between 2013 and 2020. Against this background, the adoption of the revised EU ETS Directive was important in confirming that the ETS will continue beyond the Kyoto Protocol’s first commitment period regardless of international climate policy developments.¹²⁹ This provided legal certainty for operators covered by the ETS and also sent an international signal on the EU’s aspiration to continue its international climate change leadership through the world’s largest greenhouse gas emissions trading scheme.

¹²³ Ellerman et al, cited *supra* note 81, p. 21.

¹²⁴ Permit conditions and procedures were coordinated with Directive 96/61/EC concerning Integrated Pollution Prevention and Control [1996] OJ L257/26.

¹²⁵ The ETS has also experienced other problems, including a widespread value-added tax (VAT) fraud scheme run by criminal networks in a number of Member States. See, “Further investigation into VAT fraud linked to the carbon emissions trading system”, Europol, 28. Dec 2010

<<http://www.europol.europa.eu/index.asp?page=news&news=pr101228.htm>>, accessed 21 Feb. 2011. A month before the hacking scandal, the Commission had issued a communication assessing current levels of protection of the carbon market from market misconduct or similar problems. See Commission, “Towards an enhanced market oversight framework for the EU Emissions Trading Scheme” (Communication) COM(2010)796 final, 21. Dec. 2010.

¹²⁶ Article 19.1 of Directive 2009/29/EC, cited *supra* note 30.

¹²⁷ Some of the key challenges during the first trading period included the identification of covered installations, organizing public consultations and lack of verified emissions data, which resulted in over-allocation of allowances.

¹²⁸ For the second trading period, emissions in the EU ETS sector have been capped at around 6.5 % below their levels in 2005.

¹²⁹ Some of the main questions for international climate policy include the continuity of the Kyoto Protocol beyond its first commitment period in 2012 and the ways of engaging the US and major emitting developing countries, such as China, in climate change mitigation efforts. For an overview, see Kulovesi and Gutierrez, “Climate change negotiations update: Process and prospects for an agreed outcome in Copenhagen in December 2009”, 18 *RECIEL* (2009), 229-243.

In order to enhance its cost-effectiveness, the ETS is linked to the two project-based flexibility mechanisms of the Kyoto Protocol, the CDM and JI.¹³⁰ This means that operators participating in the ETS may use credits from the CDM and JI to comply with their emissions allocations. The main motivation was to enable operators covered by the ETS to take advantage of the cost-efficient mitigation opportunities in developing countries and countries in transition to a market economy. From the point of view of internal environmental integration, the EU has introduced some stricter requirements to ensure the environmental integrity of CDM credits than those applied internationally under the Kyoto Protocol. Credits from sink (afforestation and reforestation) projects under the CDM are not eligible under the ETS, and there are also limits concerning credits from large-scale hydro projects. In a significant move, the EU has recently decided to ban also credits from projects that involve the destruction of industrial gases, namely trifluoromethane (HFC-23) and nitrous oxide (N₂O).¹³¹ These are powerful greenhouse gases and their destruction can produce large amounts of cheap carbon credits.¹³² This is reflected in the fact that credits from industrial-gas projects currently account for two thirds of all credits generated by the CDM, with most projects located in China and other advanced developing countries.¹³³ A proposal to ban HFC-23 projects from the CDM is subject to stalled negotiations under the Kyoto Protocol – one of the key concerns is that the inclusion of HFC-23 projects under the CDM can create a perverse incentive to continue, or even increase, the production of substances that must be phased out under the Montreal Protocol on Substances that Deplete the Ozone Layer.¹³⁴ There are also other environmental concerns associated with these projects and that they distort the geographical distribution of CDM projects towards advanced developing countries. However, credits from the industrial gas projects will no longer be eligible under the ETS from May 2013 onwards, i.e. they cannot be used for compliance during the third trading period regulated through the Package.¹³⁵ Given the dominant role of the EU in the carbon market, the ban should have important implications for the demand for credits from industrial gas projects under the CDM. It can therefore be seen as an example of the EU exercising “strong” international climate change leadership in an area where it is in a position to do so, and attempting to ensure that the internal dimension of the environmental integration principle is taken into account in climate change mitigation efforts.

In terms of external environmental integration, the Package extends the sectors covered by the EU ETS, notably adding the chemical industry as well as more activities under the previously included energy, metal, mineral and paper sectors.¹³⁶ Of particular interest is the decision pre-dating the Package but closely related to its objectives to include in the ETS emissions from all flights taking off and landing in the EU from 2012 onwards.¹³⁷ Like the EU decision to ban CDM credits from industrial gas projects, also this decision can be understood in the context of a long-standing

¹³⁰ Given the uncertain fate of the Kyoto Protocol in 2003 at the time that Directive 2003/87/EC (cited *supra* note 66) was adopted, the link between the ETS and the Kyoto Mechanisms was done through a separate Directive 2004/101/EC amending Directive 2003/87/EC (“Linking Directive”) [2004] OJ L338/18.

¹³¹ Emissions trading: Commission welcomes vote to ban certain industrial gas credits, (Europa Rapid Press Release) IP/11/56, 21 Jan. 2011. The European Parliament will subsequently have three months to comment on the proposal.

¹³² HFC credits have been qualified as a “loophole” and “market distortion” to the CDM and carbon markets. See, “Kyoto Protocol ‘loophole’ has cost \$6 billion” *Newscientist* (9 Feb. 2007) <<http://www.newscientist.com/article/dn11155-kyoto-protocol-loophole-has-cost-6-billion.html>> accessed 11 Nov. 2010 and Wara, “Is the global carbon market working?” 445 *Nature* (2007), 595-596.

¹³³ UNFCCC Secretariat, CDM statistics, <<http://cdm.unfccc.int/Statistics/>>, accessed 21 Feb. 2011.

¹³⁴ The reason for such concerns is that HFC-23 is produced as a by-product of chlorodifluoromethane (HCFC-22) production, which is a gas that depletes the ozone layer and is also a powerful greenhouse gas.

¹³⁵ Note, however, that after industry lobbying, the ban will enter into force four months later than the Commission’s original proposal, “EU waters down ban on industrial gas offsets”, *Carbon Market Europe*, 21 Jan. 2011.

¹³⁶ For a detailed listing, see Annex I of Directive 2009/29/EC, cited *supra* note 30.

¹³⁷ Directive 2008/101/EC of the European Parliament and of the Council of 19 November 2008 amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community, [2009] OJ L8/3.

international impasse on whether and under which international forum (UNFCCC or the relevant sectoral organizations, International Civil Aviation Organization and International Maritime Organization) to take action on emissions from international aviation and maritime transport. For the purposes of our analysis, the EU unilateral action on aviation emissions illustrates how the environmental integration principle links with the international relevance of the ETS: the EU is attempting to integrate climate change considerations into the aviation sector whose rapidly growing emissions could offset the impact of mitigation in other sectors.¹³⁸ At the same time, the EU is seeking to influence international behaviour in the aviation sector. However, the fact that the scheme will apply to non-European airlines has been subject to legal action by the Air Transport Association of the American some American airlines in the UK and a request for preliminary ruling on the issue is currently pending before the European Court of Justice.¹³⁹

B. The Package and Effectiveness of the ETS

The EU ETS is often (but not universally) perceived as a success in that it has introduced a price for greenhouse gas emissions from energy intensive sectors in the EU, thereby sending a carbon price signal for business to start investing in low-carbon technologies and mainstreaming climate change considerations into their strategies.¹⁴⁰ At the same time, the effectiveness of the ETS has been subject to a debate, which is obviously relevant in assessing the extent to which external environmental integration is actually supported by this legal tool.¹⁴¹ One of the key debates concerns the strictness of the emissions cap and the method of allocating EUAs to the participating installations. In theory, the two main choices for allocating allowances are so-called *grandfathering* (whereby allowances are distributed free of charge based on historical emissions) and *auctioning* (whereby participating installations are required to purchase the necessary allowances). During its first two phases, the ETS has mainly used grandfathering with the vast majority of EUAs allocated for free through National Allocation Plans (NAPs) drawn up by each Member State and notified to the Commission.¹⁴² Essentially, the Member State decided the overall amount of allowances and the criteria for allocating them during each of the first two trading periods, with the Commission having the power to reject a NAP or a part of it. As the effectiveness and desirability of this method was subject to debate,¹⁴³ the method of allocating EUAs was one of the key reforms to the ETS brought about by the Package.

¹³⁸ There are links to multilateral negotiations under the International Civil Aviation Organization (ICAO), as explained in Vedder, cited *supra* note 17, at 7. The 37th Session of the Assembly of ICAO adopted a resolution to reduce the impact of aviation emissions on climate change. See, “ICAO Member States agree to historic agreement on aviation and climate change” (ICAO News release, PIO 14/10, 8 Oct. 2010) <<http://www2.icao.int/en/Assembly37newsroom-public/Documents/ICAO%20Member%20States%20Agree%20To%20Historic%20Agreement%20On%20Aviation%20And%20Climate%20Change.pdf>> accessed 21 Feb. 2011.

¹³⁹ The Air Transport Association of America (ATA), American Airlines, Continental Airlines and United Airlines have challenged the inclusion of aviation emissions under the ETS in the UK High Court of Justice, which has requested a preliminary ruling from the European Court of Justice. See [2010] OJ C260/9. See also Petersen, “The legality of the EU’s stand-alone approach to the climate impact of aviation: the express role given to the ICAO by the Kyoto Protocol”, 17 *RECIEL* (2008), 196-204.

¹⁴⁰ For an example of a largely positive evaluation, see Ellerman et al., cited *supra* note 81.

¹⁴¹ For a recent critical assessment of the data concerning 2009 emissions, see Sandbag, “Rescuing the EU ETS from Redundancy” (Briefing Paper) <http://www.sandbag.org.uk/site_media/pdfs/reports/Rescuing_EU_ETS.pdf> accessed 21 Feb. 2011. The paper argues that after five years, the ETS has “failed to constrain the annual supply of carbon across capped sectors for any year except 2008,” and given the significant drop in emissions in 2009 due to the recession, the second trading period of the ETS could “allow emissions to grow with no further need for domestic abatement until 2017 or later.”

¹⁴² Around 95% of allowances were allocated free of charge during the first phase and around 90% during the second phase. According to Art. 9 of Directive 2003/87/EC, cited *supra* note 66, the Commission may reject the NAP or any aspect thereof on the basis that it is incompatible with the criteria specified in the Directive.

¹⁴³ On both occasions, the NAP process was also slow to administer. The fact that the allocations for the first trading period were not based on verified emissions also gave rise to problems. While the aim was to set the cap close to

As a result of the Package, national emissions caps determined by the Member States will be replaced by an EU-wide emissions cap that decreases by a linear reduction factor of 1.74% each year from 2013 onwards beyond 2020.¹⁴⁴ The introduction of the EU-wide cap and the provisions for calculating it offer “a long-term perspective and increased predictability, which is required for long-term investments in efficient abatement.”¹⁴⁵ Overall, the new method for setting the cap and allocating EUAs through auctioning introduced by the Package can be expected to be more transparent, predictable and equal to the participating installations than the NAP process led by the Member States. According to the Commission’s original proposal in January 2008, auctioning was to become the norm for the power sector from 2013 onwards,¹⁴⁶ but some limited exceptions were adopted as a last-minute compromise to ensure support for the Package by some of the new Member States.¹⁴⁷ For industrial installations, auctioning will be gradually increased during Phase III, starting at 30% in 2013, and reaching 70% in 2020 and 100% in 2027.¹⁴⁸ In those cases where allowances are not auctioned, they will be allocated based on harmonized rules using benchmarks related to greenhouse-gas performance.¹⁴⁹

While rules concerning the cap and allocation have been amended, the environmental effectiveness of the ETS in the third trading period is already being debated.¹⁵⁰ Because of the global economic downturn, emissions in the sectors covered by the ETS have decreased more rapidly than expected – the most recent available data indicates that in 2009 verified emissions under the ETS were 11.6% below 2008 emissions and carbon prices fell correspondingly.¹⁵¹ The architecture of the ETS means that this drop in emissions will have consequences for several years even when the economy - and emissions - pick up: operators will be able to carry over 5-8% of their unused allowances the third trading period regulated by the amended EU ETS Directive.¹⁵² This has provoked criticism that the cap is too lax and that the ETS does not provide incentives for operators to make structural

business-as-usual emissions during Phase I of the ETS, the price of EUAs eventually collapsed from its high at around €30 close to zero as monitored data released in the spring of 2006 concerning the first year showed that the cap was too lax and the actual emissions were lower than the allocations. Ellerman et al., cited *supra* note 81, pp. 36-42. Ellerman et al. explain that “The problem was that no Member State government had a good idea of the exact emissions within the ETS sectors,” at p. 37. During Phase II, the Commission took a stricter stance on the NAPs and verified emissions from 2005 were used as the baseline in setting the cap for 2008-2012, which is around 6.5% below 2005 emissions. However, NAPs have been subject to a number of legal challenges. The most notable cases concern NAPs by Estonia and Poland for the second trading period where the General Court found that the Commission had exceeded its powers when significantly reducing the allocations. See Case T-183/07 Poland v Commission and Case T-263/07 Estonia v Commission, 23 September 2009.

¹⁴⁴ Art. 9 of Directive 2009/29/EC, cited *supra* note 30. The linear factor was determined based on the EU’s unilateral pledge to reduce emissions by 20% from 1990 levels by 2020 (i.e. by 14% from 2005 levels). The ETS sector will reduce emissions by 21% from 2005 levels by 2020, in other words, more than non-ETS sectors. The linear factor will continue beyond 2020 and it will be revised at the latest in 2025.

¹⁴⁵ COM(2008)16 final, cited *supra* note 23, at 7.

¹⁴⁶ *Ibid.*

¹⁴⁷ Preamble para. 19 and Art. 10(c) of Directive 2009/29/EC, cited *supra* note 30.

¹⁴⁸ *Ibid.*, preamble para. 21. The Commission originally proposed to reach full auctioning in these sectors by 2020.

¹⁴⁹ *Ibid.*, Art. 10a. See also Draft Decision by the Commission determining transnational Union-wide rules for harmonized free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC, as approved by Climate Change Committee, 15 Dec. 2010, at

<http://ec.europa.eu/clima/documentation/ets/docs/decision_benchmarking_15_dec_en.pdf>, accessed 21 Feb. 2011.

¹⁵⁰ Another issue that could compromise the effectiveness of the EU ETS is the use of international offsets. For example, in 2009, while credits from international offsets accounted for only 4.3% of credits surrendered under the ETS, the share of credits from controversial HFC projects accounted for 59% of all CDM credits under the ETS. Elsworth and Worthington, “International Offsets and the EU 2009. An update on the usage of compliance offsets in the EU Emissions Trading Scheme” (Sandbag Climate Campaign Report, July 2009)

<http://www.sandbag.org.uk/site_media/pdfs/reports/offset2009.pdf> accessed 11 Nov. 2010.

¹⁵¹ “EU ETS: Emissions fall more than 11% in 2009” (Europa Rapid Press Release) IP/10/576, 18 May 2010.

¹⁵² COM(2010)265 final, cited *supra* note 92, p. 3.

investments to reduce their emissions.¹⁵³ In May 2010, the Commission acknowledged that the economic analysis underlying the Package was no longer valid and suggested “recalibrating” the ETS by setting aside EUAs originally intended for auction.¹⁵⁴ It remains to be seen what course of action the Member States will choose to take in response to the Commission’s proposals. For present purposes, this seems to indicate that ensuring effective incorporation of climate change considerations into decision-making by the covered sectors (external environmental integration) can be a challenging task. In other words, during its first two trading periods, the ETS has struggled to set the emission cap at a level that would provide an effective price signal - first because of lack of reliable information on past emissions and then due to unforeseen impacts of the global economic downturn. This means that the effectiveness of the ETS during the third trading period is once again questionable and its practical implications for external environmental implication remain uncertain.

C. International Dimensions of the Amended EU ETS

Focusing on the multi-faceted international dimensions of the Package, the following sub-sections will address, in turn, provisions in the EU ETS Directive related to climate finance, carbon leakage, and expanding the carbon market by linking the EU ETS with other emissions trading schemes.

i. Climate Finance

One of the key issues in the negotiations under the UNFCCC relates to ways to finance climate change mitigation and adaptation actions, especially in developing countries.¹⁵⁵ At the UN Climate Change Conferences in Copenhagen and Cancun, developed countries committed to a goal of mobilizing jointly USD 100 billion per year by 2020 to address the needs of developing countries.¹⁵⁶ In addition, climate finance will also be needed for mitigation and adaptation in developed countries. The question of funding sources remains controversial and UNFCCC Parties have only agreed that funding for developing countries “may come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources.”¹⁵⁷ In light of the considerable future climate finance needs, provisions in the revised EU ETS Directive concerning proceeds from the auctioning of EUAs are interesting also from the international perspective. They are also closely linked to questions of external and internal environmental integration.

In its proposal to amend the EU ETS and make auctioning the default method of allocation, the Commission suggested using a proportion of auctioning revenues:

... to reduce greenhouse gas emissions, to adapt to the impacts of climate change, to fund research and development for reducing emissions and adapting, to develop renewable energies to meet the EU’s commitment to using 20% renewable energies by 2020, for the capture and geological storage of greenhouse gases, to contribute to the Global Energy Efficiency and Renewable Energy Fund, for measures to avoid deforestation and facilitate

¹⁵³ Sandbag, “Briefing Paper”, cited *supra* note 141.

¹⁵⁴ According to the Commission, the unexpected drop in greenhouse gas emissions following the economic crisis means that the cost of complying with the 20% emission reduction target is now lower, estimated at €48 billion rather than the previously estimated “at least €70 billion.” COM(2010)265 final, cited *supra* note 92, p. 3.

¹⁵⁵ For the main outstanding points in the climate change negotiations, see, Kulovesi and Gutierrez, cited *supra* note 129; and Jinnah, Bushey, Muñoz and Kulovesi, “Tripping points: barriers and bargaining chips on the road to Copenhagen”, 4(3) *Env. Research Letters* (2009), <http://iopscience.iop.org/1748-9326/4/3/034003/pdf/1748-9326_4_3_034003.pdf> accessed 21 Feb. 2011.

¹⁵⁶ UNFCCC Decision 1/CP. 16, cited *supra* note 60, paragraph 98.

¹⁵⁷ *Ibid.*, paragraph 99. Essentially, developing countries emphasise the need for new, additional and predictable public funding from developed countries, while developed countries wish to place the emphasis on private and innovative funding sources.

adaptation in developing countries, and for addressing social aspects such as possible increases in electricity prices in lower and middle incomes.¹⁵⁸

The Commission originally proposed that “at least 20%” of the revenues generated from the auctioning of allowances under the ETS *should* be used for activities related to climate change mitigation and adaptation.¹⁵⁹ The final version retains the non-binding language and refers to “at least 50%” of the auctioning revenues or “the equivalent value of these revenues” (thereby leaving the Member States discretion to decide how to spend the auctioning revenues).¹⁶⁰ Additions and specifications were also made to the list of possible activities, including references to the Kyoto Protocol Adaptation Fund, technology transfer, as well as afforestation and reforestation activities in developing countries.¹⁶¹ The chosen approach arguably reflects internal environmental integration to the extent that auctioning revenues generated under the ETS will be used to pursue a holistic approach to climate change mitigation and adaptation, by funding, *inter alia*, activities to avoid or mitigate adverse environmental impacts on biodiversity from CCS and deforestation, or to promote ecosystem-based adaptation.¹⁶² The idea of using climate financing for an integrated implementation of different multilateral environmental agreements has been put forward by the EU also in international fora: the EU has argued, for instance, that climate financing should be used to achieve both climate change and biodiversity objectives.¹⁶³

For the ongoing international debate on climate finance, the provisions on auctioning revenues in the revised EU ETS are noteworthy: while non-binding, they constitute the first example of legislation that aims to generate climate finance for both, domestic and international purposes. It can be questioned, however, whether they are ambitious enough for the EU to assert global leadership in this area. Within the EU, the question of finance was subject to an internal debate throughout 2009. The lack of decisive position in the negotiations leading up to Copenhagen provoked criticism especially from civil society and the EU was accused of “putting a global climate deal at risk and threatening the lives of millions of the world’s poorest.”¹⁶⁴ In the autumn 2009, the Commission published a blueprint for climate finance, estimating that “finance requirements for adaptation and mitigation in developing countries could reach roughly €100 billion a year by 2020.”¹⁶⁵ This would mean “international public funding in the range of €22 to 50 billion per year in 2020,” of which the EU’s share would be approximately between 10-30%.¹⁶⁶ On meeting this funding requirement through auctioning revenues from the ETS, the Commission estimates:

¹⁵⁸ COM(2008)16 final, cited *supra* note 23.

¹⁵⁹ *Ibid.*

¹⁶⁰ Art. 10(3) of Directive 2009/29/EC, cited *supra* note 30.

¹⁶¹ *Ibid.*

¹⁶² On the interactions between climate and biodiversity law, see Morgera, “Far away, so close”, cited *supra* note 44.

¹⁶³ Council (EU), “EU and global vision and targets and international ABS regime”, (Environment Council Conclusions, 7536/10, 16 Mar. 2010), para. 19, indicating that “public and private finance, including innovative forms of financing, and finance associated with the Copenhagen Accord on climate change, should - based on appropriate criteria - include scope for payments for ecosystem services, where appropriate, including for both adaptation and mitigation, and should specifically support conservation and sustainable use of biodiversity within REDD-plus, as appropriate, through the implementation of negotiated safeguards.”

¹⁶⁴ “EU climate approach puts world’s poorest people at peril” (Oxfam Press Release, 2 March 2009)

<<http://www.oxfam.org/en/pressroom/pressrelease/2009-03-02/eu-climate-approach-puts-worlds-poorest-at-peril>> accessed 21 Feb. 2011.

¹⁶⁵ Commission, “Stepping up international climate finance: A European blueprint for the Copenhagen deal” (Communication) COM(2009) 475/3, September 2009. The Commission further specified that domestic private and public finance could deliver between 20-40%, the carbon market up to around 40%, and international public finance could contribute to cover the remainder.

¹⁶⁶ *Ibid.*

Whilst it is difficult to be precise about the future carbon price and therefore the size of auctioning revenues, it is estimated that if the EU was required to finance €3 billion in 2013 – the upper end of the scale – this would account for between 7 and 20% of total auction revenues. It would therefore be well covered by the revenues flowing into government treasuries from climate change policies.¹⁶⁷

Just before the Copenhagen Climate Change Conference, in November 2009, the Council agreed to endorse these Commission's financing estimates but without specifying the EU's share.¹⁶⁸ During the 2009 Copenhagen Conference, the EU pledged €7.2 billion of fast-start financing for a three-year period in 2010-2012.¹⁶⁹ The EU has subsequently been criticised concerning the implementation of the fast-start funding pledge and questions have been raised, in particular, over whether funding by all Member States is new and additional.¹⁷⁰ Overall, while the EU has attempted to play a constructive role concerning climate finance, divides persist between the EU and other developed countries on one side, and developing countries on the other, concerning the role of public financing in addressing climate change.¹⁷¹ In this regard, the non-binding provisions on auctioning review in the revised EU ETS Directive have not provided the final answer.

ii. Carbon Leakage

Another key international issue concerning the ETS in the Package relates to carbon leakage. Carbon leakage refers to a situation where mitigation policies lead to growth of greenhouse gas emissions in other sectors or countries as companies shift their production as a result of the carbon price. As explained above, the EU took a decision to launch the ETS and introduce a price for carbon dioxide emissions during one of 'the darkest moments' of international climate policy. This gave rise to concerns over competitiveness of the European industries: the UNFCCC and the Kyoto Protocol are based on the principle of common but differentiated responsibilities, and developing countries, including China, India, Brazil, South Africa and other emerging economies have thus far not been required to control the growth of their greenhouse gas emissions.¹⁷² Furthermore, the US never ratified the Kyoto Protocol and does not intend to do so.¹⁷³ This means that emitting greenhouse gases has, for the most part, no monetary cost outside the EU.¹⁷⁴ Addressing concerns over competitiveness and introducing measures aimed at preventing carbon leakage formed therefore an important part of the Climate and Energy Package. According to the Commission:

In the event that other developed countries and other major emitters of greenhouse gases do not participate in an international agreement that will achieve the objective of limiting

¹⁶⁷ Ibid.

¹⁶⁸ Presidency Conclusions of the Brussels European Council, 29-30 October 2009, 15265/1/09 Rev 1.

¹⁶⁹ This is in line with the (unadopted) Copenhagen Accord, which included agreement by developed countries to provide "new and additional resources, including forestry and investments through international institutions, approaching USD 30 billion for the period 2010-2012." For text of the Copenhagen Accord, see UNFCCC, UN Doc FCCC/CP/2009/11/Add.1, annex to Decision 2/CP.15 (30 Mar. 2010).

¹⁷⁰ For criticism, see NGO Briefing Paper, *The Preliminary Report on EU Fast Start Finance: NGO Comment and Analysis – Bare Bones, No Meat*, 3 June 2010, < <http://www.climnet.org/policywork/un-climate-negotiations/224-eu-fast-start-finance-interim-reporting-has-little-meat.html> >, accessed 21 Feb. 2011.

¹⁷¹ "Summary of the Tianjin climate change talks," 12(483) *The Earth Negotiations Bulletin* (12 Oct. 2010).

¹⁷² However, in a significant move, all emerging economies have recently communicated their national mitigation pledges to the UNFCCC Secretariat in the context of the Copenhagen Accord. For information on the pledges, see UNFCCC Secretariat's website < <http://unfccc.int/home/items/5265.php> > accessed 21 Feb. 2011. The Cancun Agreements included a process to "anchor" such pledges formally under the UNFCCC regime. See UNFCCC Decision 1/CP.16, cited *supra* note 60, paragraphs 49-51 and 59.

¹⁷³ For a recent statement by the US under the UNFCCC that it "is not party to the Kyoto Protocol and does not intend to become such," see 12(466) *The Earth Negotiations Bulletin*, (5 Jun. 2010).

¹⁷⁴ New Zealand already has a greenhouse gas emissions trading scheme. The US, Japan and Australia have all been planning to launch emissions trading schemes but their plans have run into political difficulties. Also China has been exploring options to launch emissions trading in certain energy-intensive industry sectors.

global temperature increase to 2°C, certain energy-intensive sectors and sub-sectors in the Community subject to international competition could be exposed to the risk of carbon leakage. This could undermine the environmental integrity and benefit of actions by the Community.¹⁷⁵

In 2009, the Commission determined sectors exposed to carbon leakage based on the criteria listed in the ETS Directive adopted as a part of the Package.¹⁷⁶

The key measure aimed to prevent carbon leakage included in the Package is that sectors exposed to carbon leakage will continue to receive 100% of their allowances free of charge. In its proposal, the Commission also mentioned the possibility of establishing “an effective carbon equalisation system” with the view of putting EU installations on a comparable footing with those from third countries.¹⁷⁷ The system would essentially mean requiring those importing energy-intensive products to the EU to purchase allowances corresponding to their greenhouse gas emissions during the manufacturing of the product. Final decision on the possible further measures to address carbon leakage was postponed pending the outcome of the UN Climate Change Conference in Copenhagen in December 2009.¹⁷⁸ The Directive requested the Commission to review the situation in light of the outcome of the international negotiations, prepare a report by June 2010 and make “appropriate proposals.”¹⁷⁹ In May 2010, the Commission provided the required report, noting that given the uncertainties surrounding international climate policy, the measures already included in the Package to address carbon leakage - free allowances and access to international offsets - remain justified.¹⁸⁰ The Commission also discussed the idea of including imports into the ETS, noting that similar proposals had been discussed in the US and that “obviously it would be desirable for such initiatives to be taken together with such partners.”¹⁸¹ The Commission highlighted, however, concerns voiced by emerging economies over plans to include their imports under the ETS and drew attention to “broader issues about the EU’s trade policy and its overall interest in an open trade system.”¹⁸² Indeed, a number of questions have been raised concerning the compatibility of the proposed carbon equalisation system with WTO law and the principle of common but differentiated responsibilities under the UNFCCC.¹⁸³ In its report, the Commission acknowledged that treating developed and developing countries in the same way in terms of climate change mitigation problems would be problematic from the point of view of the principle of common but differentiated responsibilities under the UNFCCC.¹⁸⁴ The Commission also stressed the need to design measures targeting imports “carefully” in order to ensure their compatibility with WTO law. It also drew attention to potential administrative difficulties and argued that “it would seem challenging to verify the performance of individual installations in third countries without a highly sophisticated monitoring and reporting system in place at installation level.”¹⁸⁵

¹⁷⁵ COM(2008)16 final, cited *supra* note 23.

¹⁷⁶ Commission Decision of 24 Dec. 2009 determining, pursuant to Directive 2003/87/EC, a list of sectors and subsectors which are deemed to be exposed to a significant risk of carbon leakage, [2010] OJ L1/10.

¹⁷⁷ COM(2008)16 final, cited *supra* note 23.

¹⁷⁸ Preamble paragraph 26 and Art. 10(b) of Directive 2009/29/EC, cited *supra* note 30, indicating that the Commission should review the situation with respect to carbon leakage by 30 Jun. 2010.

¹⁷⁹ *Ibid.*, Art.10(b).

¹⁸⁰ COM(2010) 265 final, cited *supra* note 92, at pp. 11-12.

¹⁸¹ *Ibid.*

¹⁸² *Ibid.*

¹⁸³ For an overview of legal concerns, see Dhar and Das, “The European Union’s proposed carbon equalization system: Can it be WTO Compatible?” (Research and Information System for Developing Countries Discussion Paper No.156, 25 Nov. 2009) <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1513231> accessed 21 Feb. 2011.

¹⁸⁴ COM(2010) 265 final, cited *supra* note 92, at pp. 11-12.

¹⁸⁵ *Ibid.*

The provisions on carbon leakage and the proposed carbon equalisation system highlight the prominent international dimensions of the Package. While including imports under the ETS could boost the EU climate change objectives and show “strong” (but unilateral) climate change leadership, the Commission seems to be acutely aware of the fact that international legal challenges could well follow from such a decision.¹⁸⁶ One of the international legal problems is that the most-favoured nation principle, which forms the cornerstone of the WTO regime and requires equal treatment of imports from all WTO Member States, and the principle of common but differentiated responsibilities and respective capabilities, which forms the cornerstone of the UNFCCC regime, would seem to point to opposite directions. From the point of view of WTO law, a number of other considerations would also have to be taken into account.¹⁸⁷ As an alternative to the carbon equalisation system, the Commission raises the possibility of “a more targeted approach to the nature and recognition of international credits in the ETS.”¹⁸⁸ The Commission mentions a possible pilot between the EU and China involving sectoral crediting on steel and highlights technology transfer as another means of helping emerging economies to close a competitive gap.¹⁸⁹ Overall, a decision by the EU to include energy-intensive imports under the ETS would extend the carbon price signal to energy-intensive sectors outside the EU, thereby potentially promoting external environmental integration. However, from the point of view of international cooperation under the WTO and UNFCCC regimes, it would create controversy and thereby run counter to the EU’s general objective of promoting multilateralism.¹⁹⁰

Finally, the revised EU ETS Directive’s provisions on carbon leakage are also interesting from the point of view of legislative technique as they make a close and explicit connection between the outcome of international negotiations and possible changes in terms of EU’s internal integration. In other words, possible further action on carbon leakage in the EU is explicitly linked in the operative text of the Directive to the outcome of negotiations on the future climate regime under the UNFCCC.¹⁹¹

iii. Linking Emission Trading Schemes

The international dimensions of the ETS are not limited to climate finance and carbon leakage. As discussed above, the decision to adopt the ETS was linked to the EU’s desire to play a global leadership role in the battle against climate change and the ETS is seen “an important building block for the development of a global network of emission trading systems.”¹⁹² In this respect, the EU is hoping that the ETS will help to expand the global carbon market through interlinked emissions trading schemes, first within countries belonging to the OECD and later including other major economies.¹⁹³ The EU’s desire to create a global carbon market is increasingly reflected also in the EU bilateral external relations.¹⁹⁴ The Package introduced some reforms to facilitate the EU’s ambition to expand the global carbon market. In its original form, the ETS Directive allowed for

¹⁸⁶ *Ibid.*, at 12. See also COM(2008)16 final, cited *supra* note 23, at 8.

¹⁸⁷ For a legal analysis, see Dhar and Das, cited *supra* note 183.

¹⁸⁸ COM(2010)265 final, cited *supra* note 92, p. 12

¹⁸⁹ *Ibid.*

¹⁹⁰ Art. 21(1) Treaty on the European Union [2010] OJ C83/1 reads: “The Union ... shall promote multilateral solutions to common problems, in particular in the framework of the United Nations.”

¹⁹¹ See, for example, Art. 28(1) of Directive 2009/29/EC, cited *supra* note 30, according to which, three months upon the approval of a future international climate change agreement leading to the EU undertaking mandatory emission reductions exceeding 20% from 1990 levels by 2020, the Commission must report and assess the agreement, focusing on elements specified in the Directive.

¹⁹² “Questions and Answers on the revised EU Emissions Trading System” (Europa Rapid Press Release). Memo/08/796, 17 Dec. 2008.

¹⁹³ “EU Action Against Climate Change”, cited *supra* note 117.

¹⁹⁴ See, for instance, “EU-Republic of Korea Summit (Joint Press Statement), 6 Oct. 2010, where the leaders noted that the EU’s emissions trading scheme experience is a useful example in strengthening global carbon market mechanisms, <http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/er/116900.pdf> accessed 21 Feb. 2011.

linking the ETS with schemes in other industrialised countries having ratified the Kyoto Protocol.¹⁹⁵ Due to the fact that the US will not ratify the Kyoto Protocol,¹⁹⁶ new provisions were added to the ETS Directive, making it possible to recognise allowances from “compatible” and “mandatory” emissions trading schemes with absolute emission caps in “any other country” or “sub-federal or regional entities”.¹⁹⁷ The language would enable linking the ETS with either a federal or regional emissions trading scheme in the US. From the US domestic perspective, both alternatives remain open although a federal emissions trading scheme is looking far less likely as it did in 2009 and early 2010. Initially, the Obama Administration outlined plans for a federal cap-and-trade scheme: the Waxman-Markey Bill passed the House of Commons in 2009 and in May 2010, Senators Kerry Lieberman and Graham released the American Power Act for consideration in the Congress.¹⁹⁸ However, plans for a federal cap-and-trade scheme have subsequently been frozen.¹⁹⁹ The EU’s current focus thus remains on US regional emission trading initiatives, such as the Regional Greenhouse Gas Initiative and possible action by the Environmental Protection Agency.²⁰⁰

From a global perspective, a link between the ETS and a comprehensive emissions trading scheme in the US would have important implications: not only would it be “a strong political signal for the creation of a global carbon market, but would eliminate competitive concerns between these two players caused by different carbon prices.”²⁰¹ The scheme would also provide “the backbone for the overall international climate regime, with subsequent enlargements to other developed and developing countries.”²⁰² Also other OECD countries, such as Australia, New Zealand and Japan are considering or have already launched national greenhouse gas emissions trading schemes. For this reason, the new provisions in the ETS Directive concerning links with other greenhouse gas emissions trading schemes represent a currently dormant but potentially important international dimension of the Package.

4. THE EFFORT-SHARING DECISION

The EU ETS Directive is complemented by the Effort-sharing Decision,²⁰³ which is also significant both from an internal and external environmental integration perspective. Sectors not covered by the EU ETS represent approximately 60% of the EU’s greenhouse gas emissions. In these sectors, the Effort-sharing Decision introduces a national target for each Member State during the period 2013-2020. In average, the reduction in the sectors covered by the Effort Sharing Decision will be 10% from 2005 levels by 2020 (see Figure 1). According to the Decision, the national target for each Member State was determined through a process seeking to reflect fairness, with targets set as a function of the per capita Gross Domestic Product (GDP): countries with high GDP per capita are required to reduce their emissions, while those with lower GDP per capita are allowed to increase

¹⁹⁵ Art. 25 of Directive 2003/87/EC, cited *supra* note 66, providing that “Agreements should be concluded with third countries listed in Annex B to the Kyoto Protocol which have ratified the Protocol to provide for the mutual recognition of allowances between the Community scheme and other greenhouse gas emissions trading schemes in accordance with the rules set out in Art. 300 of the Treaty.”

¹⁹⁶ 12(466) *The Earth Negotiations Bulletin*, cited *supra* note 173.

¹⁹⁷ Article 25.1(a) of Directive 2009/29/EC, cited *supra* note 30.

¹⁹⁸ Gerrad, “Climate regulation without congressional action”, *New York Law Journal* (New York 6 Oct. 2010) 244(68) <<http://www.law.com/jsp/nylj/PubArticleNY.jsp?id=1202472923986>> accessed 21 Feb. 2011.

¹⁹⁹ *Ibid.*

²⁰⁰ The RGGI is a regional emissions trading scheme for carbon dioxide emissions from the power sector in Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont. For an overview other regional initiatives see, Pew Center, Regional initiatives <http://www.pewclimate.org/what_s_being_done/in_the_states/regional_initiatives.cfm>, accessed 21 Feb. 2011.

²⁰¹ Streck, Mehling and Turek, “Prospects of Linking EU and US Emission Trading Schemes: Comparing the Western Climate Initiative, the Waxman-Markey and Lieberman-Warner Proposals” (Climate Strategies, April 2009) <<http://www.climatestrategies.org/component/reports/category/33/143.html>> accessed 21 Feb. 2011.

²⁰² *Ibid.*

²⁰³ Decision No. 406/2009/EC, cited *supra* note 34.

them.²⁰⁴ The targets adopted as a part of the Package were the same as those initially proposed by the Commission. Instead, what were modified during the political negotiations leading to the adoption of the Package were the rules applicable to meeting the targets.

The Decision applies to sectors such as transport, heating in buildings and waste. Emissions in these sectors tend to be diffuse and have important differences in mitigation potentials, which is why Member States may use their discretion as to where to concentrate their efforts. It is useful to note that a sector known as Land Use, Land-Use Change and Forestry (LULUCF) covering emissions and removals of greenhouse gases from direct human-induced activities affecting land use, is not included in the Package. The Commission was supposed to propose their inclusion once the international LULUCF rules have been agreed in the UN climate negotiations.²⁰⁵ In practice, the LULUCF sector is important as it accounted for some 8% of the EU's total emissions in 2008.²⁰⁶ In September 2010, the Commission launched public consultations on whether LULUCF should be included in the EU's 20%, or 30%, target.²⁰⁷

Table 1: The Package by the numbers

MEMBER STATE		Renewable Energy Share 2005*	Renewable Energy Target 2020**	2020 GHG Emission Targets ⁺ (non-ETS ⁺⁺)	2020 GHG Emission Targets ⁺ non-ETS ⁺⁺ (tCO ₂ -eq)	Kyoto Protocol Targets _%	EU-15 'bubble' Kyoto targets _%
BE	Belgium	2,2%	13%	-15 %	70.954.356	92%	92,5%
BG	Bulgaria	9,4%	16%	20%	35.161.279	92%	
CZ	Czech Republic	6,1%	13%	9%	68.739.717	92%	
DK	Denmark	17,0%	30%	-20 %	29.868.050	92%	79%
DE	Germany	5,8%	18%	-14 %	438.917.769	92%	79%
EE	Estonia	18,0%	25%	11%	8.886.125	92%	
IE	Ireland	3,1%	16%	-20 %	37.916.451	92%	113%
EL	Greece	6,9%	18%	-4 %	64.052.250	92%	125%
ES	Spain	8,7%	20%	-10 %	219.018.864	92	115%
FR	France	10,3%	23%	-14 %	354.448.112	92%	100%
IT	Italy	5,2%	17%	-13 %	305.319.498	92%	93,5%

²⁰⁴ Ibid., preambular para 8. See also COM(2008)17 final, cited *supra* note 24.

²⁰⁵ Arts. 8.6 and 9 of Decision 406/2009/EC, cited *supra* note 34. The Decision contains provisions concerning the treatment of LULUCF emissions in the event that there is no international agreement by 31 Dec. 2010. At the UN Climate Change Conference in Cancun (December 2010), Kyoto Protocol Decision 2/CMP.6 contains agreement on LULUCF rules in the post-2012 period and an agenda for further negotiation.

²⁰⁶ Directorate-General for Climate Action (DG Clima), Brussels, 10 Sept. 2010. Public consultation on the role of EU agriculture and forestry in achieving the EU's climate change commitments. Background note for public consultation <http://ec.europa.eu/clima/consultations/0003/background_climate.pdf> accessed 21 Feb. 2011.

²⁰⁷ Ibid.

CY	Cyprus	2,9%	13%	-5 %	4.633.210	n/a	
LV	Latvia	32,6%	40%	17%	9.386.920	92%	
LT	Lithuania	15,0%	23%	15%	18.429.024	92%	
LU	Luxembourg	0,9%	11%	-20%	8.522.041	92%	72%
HU	Hungary	4,3%	13%	10%	58.024.562	94%	
MT	Malta	0,0%	10%	5%	1.532.621	n/a	
NL	Netherlands	2,4%	14%	-16 %	107.302.767	92%	94%
AT	Austria	23,3%	34%	-16 %	49.842.602	92%	87%
PL	Poland	7,2%	15%	14%	216.592.037	94%	
PT	Portugal	20,5%	31%	1%	48.417.146	92%	127%
RO	Romania	17,8%	24%	19%	98.477.458	92%	
SI	Slovenia	16,0%	25%	4%	12.135.860	92%	
SK	Slovakia	6,7%	14%	13%	23.553.300	92%	
FI	Finland	28,5%	38%	-16 %	29.742.510	92%	100%
SE	Sweden	39,8%	49%	-17 %	37.266.379	92%	104%
UK	United Kingdom	1,3%	15%	-16 %	310.387.829	92%	87,5%

* Share of energy from renewable sources in gross final consumption of energy, 2005, from Annex I, Directive 2009/28/EC.

** Target for share of energy from renewable sources in gross final consumption of energy, 2020, from Annex I, Directive 2009/28/EC.

+ Relative to 2005. Member State limits in 2020 for greenhouse gas emissions from sources not covered under the ETS Directive compared to 2005 greenhouse gas emissions levels. From Annex COM(2008) 17 final.

++ The EU ETS cap for 2013 has been determined at 1,926,876,368 allowances, and will annually decrease by 35.374.181. The 2012 cap, however, is subject to adjustments.

§§ Relative to 1990, from Kyoto Protocol.

§§§ Relative to 1990, from Council Decision 2002/358/EC, 25 April 2002.

Under the Effort-sharing Decision, each Member State must meet its binding annual target.²⁰⁸ The target is subject to strict reporting and compliance checks.²⁰⁹ Member States that are in non-compliance will be subject to coercive action.²¹⁰ It is also possible for Member States to transfer

²⁰⁸ Art. 3 of Decision No. 406/2009/EC, cited *supra* n. 34. Essentially, the targets include a linear emission reduction pathway. The starting point is based on average emissions in 2008-2010 and the end point is in 2020. According to Art. 3.3, banking is possible and a Member State may carry forward from the following year a quantity of up to 5 % of its annual emission allocation.

²⁰⁹ *Ibid.*, Arts. 6 and 7.

²¹⁰ *Ibid.*, Art. 7.

emission rights among themselves²¹¹ or to implement EU-wide projects.²¹² In this regard, the Effort-sharing decision has created new market mechanisms for emission trading between the EU Member States.

Vedder has identified two international elements in the Effort-sharing Decision. First, as in the case of the EU ETS, there is explicit provision for adjustments depending on the evolution of the international climate regime. Second, Member States are called upon to ensure that purchase of credits enhance the equitable geographic distribution of CDM projects promoted by EU companies in developing countries and achievement of an international agreement on climate change.²¹³ This international dimension relates to the possibility to use carbon credits generated by the CDM for which the Effort-sharing Decision contains detailed rules.²¹⁴ This possibility also ties in with EU bilateral external efforts to support the CDM in third countries.²¹⁵ Indeed, the preamble of the Effort-Sharing Decision provides that the Member State should be able to use additional credits resulting from agreements concluded between the EU and third countries. The interplay between EU domestic law and international action, at the multilateral and bilateral level, is also visible in the CCS Directive, which will be discussed next.

5. CARBON CAPTURE AND STORAGE

An unprecedented legal initiative included in the Package, the CCS Directive presents interesting international dimensions, particularly with reference to internal environmental integration. The latter point is clearly reflected in the purpose of the Directive, which is to establish a “legal framework for the *environmentally safe* geological storage of carbon dioxide to contribute to the fight against climate change” and to “eliminate as far as possible negative effects and any risk to the environment and human health.”²¹⁶ The CCS Directive is considered the world’s first example of legislation dedicated to this issue.²¹⁷

According to the IPCC, carbon dioxide capture and storage is “a process consisting of the separation of carbon dioxide from industrial and energy-related sources, transport to a storage location and long-term isolation from the atmosphere.”²¹⁸ The scope of the CCS Directive relates to the capture of carbon dioxide emitted during industrial processes and power generation, and storing the carbon dioxide in geological formations so that it cannot contribute to climate change. If

²¹¹ *Ibid.*, Art. 3.4, according to which a Member State may also transfer up to 5 % of its annual emission allocation to other Member States.

²¹² *Ibid.*, Art. 5.7, according to which Member States may use credits from EU-level projects issued pursuant to Art. 24a of Directive 2003/87/EC towards their emission reduction commitments, without any quantitative limit.

²¹³ Vedder, cited *supra* note 17, at 6, referring respectively to Arts. 5(1), 8 and 9 of the Effort-sharing Decision, cited *supra* n. 34. The Effort-sharing Decision limits the *annual* use of credits to 3% of the Member State’s greenhouse gas emissions in 2005, plus a possible additional share of its 3% annual quantity transferred by another Member State. Art. 5 also contains rather complex criteria according to which certain Member States may use additional credits amounting to 1% of their 2005 emissions.

²¹⁴ *Ibid.*, Art. 5.

²¹⁵ van der Grijp and Etty, “Incorporating Climate Change into EU Development Cooperation Policy,” in Gupta and van der Grijp, *Mainstreaming Climate Change in Development Cooperation* (CUP, 2010) pp. 169-205, at pp. 182-184.

²¹⁶ Art. 1 of Directive 2009/31/EC, cited *supra* note 32. Emphasis added.

²¹⁷ Roche Kelly, Oberthür and Pallemmaerts, cited *supra* note 70, p. 19. There, is however, proposed CCS legislation in the US Senate. See “Rockefeller, Voinovich introduce carbon capture and storage development act of 2010” (14 Jul. 2010) <<http://rockefeller.senate.gov/press/record.cfm?id=326356>> accessed 21 Feb. 2011.

²¹⁸ Intergovernmental Panel on Climate Change, “Special Report on Carbon Capture and Storage, Summary for Policy Makers” (Report of Working Group III of the Intergovernmental Panel on Climate Change, Montreal, 22-24 Sept. 2005), <http://www.ipcc.ch/pdf/special-reports/srccs/srccs_summaryforpolicymakers.pdf> accessed 11 Nov. 2010, at p. 3. The technical options for storage include geological (underground and under the seabed) and dissolved in the water column. This latest option is generally rejected due to the large uncertainties regarding permanence and environmental impact.

successful, CCS would decouple carbon dioxide emissions from the use of fossil fuels, effectively decarbonising the energy sector. It has also been estimated that its mitigation potential is very large and the available storage space would be adequate to store about the double of the amount of carbon dioxide emissions that would be required this century, even under very ambitious climate policy assumptions.²¹⁹ At the same time, the capture process requires large amounts of energy²²⁰ and it can also be questioned whether the use of CCS only entrenches unhealthy dependency on coal and fossil fuels.²²¹ Furthermore, CCS is a non-demonstrated technology with several question marks surrounding it. As the CCS Directive preamble acknowledges:

Each of the different components of CCS, namely capture, transport and storage of carbon dioxide, has been the object of pilot projects on a smaller scale than that required for their industrial application. These components still need to be integrated into a complete CCS process, technological costs need to be reduced and more and better scientific knowledge has to be gathered.²²²

In addition to being very costly, CCS demonstration projects face many hurdles, including technical, legal, safety and environmental considerations. The rationale for the EU legislative initiative on CCS relates to the recognition that global greenhouse gas emissions could not be reduced by 50% by 2050 (as required for the 2°C target) in a cost-efficient manner without CCS.²²³ Nonetheless, CCS technology is associated with safety and environmental risks, including leakage, transport and sudden release of carbon dioxide, which in large quantities could be lethal. Like other large industrial installations, there are issues with storage sites, licensing, and public acceptance.²²⁴ In addition, permanence is an important concern, in other words, whether it will be possible ensure that the carbon dioxide stored does not find its way back to the atmosphere. Because carbon dioxide is stored for the longer-range future, it also has long-term implications, including those of inter-generational equity.²²⁵ Others stem from legal and emissions liabilities in case of carbon release.²²⁶ The Commission in fact identified in its impact assessment the risk that carbon dioxide captured and stored does not remain isolated from the atmosphere and biosphere, albeit concluding that impacts on terrestrial biodiversity would be very limited.²²⁷ For these reasons, Member States have discretion in determining whether to make available sites for storage and to identify such sites, as well as to determine the conditions for site use.²²⁸

²¹⁹ Metz, cited *supra* note 61, pp. 138-141.

²²⁰ *Ibid.*

²²¹ Mace, "Carbon capture and storage: legal issues," *Sustainable Development Opinion* (IIED, 2006), <<http://pubs.iied.org/pdfs/11066IIED.pdf>>, accessed 21 Feb. 2011.

²²² Directive 2009/31/EC, cited *supra* note 32, at preambular para 11.

²²³ Commission, "Summary impact assessment: Commission staff working document accompanying the proposal for a directive on the geological storage of carbon dioxide" SEC(2008) 55, COM(2008) 18 final, 23 Jan. 2008, para 10, where it is stated that "without CCS the cost of meeting a reduction in the region of 30% in 2030 in the EU could be up to 40% higher than with CCS."

²²⁴ Stakeholders' concerns also relate to the possible diversion of efforts from energy efficiency and renewables towards CCS, security of storage and unpredictable implications for the energy mix, see CCS proposal, cited *supra* note 19, at 3.

²²⁵ Roggenkamp and Woerdman, "Looking beyond the legal uncertainties of CCS" in Roggenkamp and Woerdman (Eds.), *Legal Design of Carbon Capture and Storage – Developments in the Netherlands, from an International and EU Perspective* (Intersentia, 2009), pp. 347-360, pp. 347, 350.

²²⁶ Chiavari, "The legal framework for carbon capture and storage in the EU (Directive 2009/31/EC)" in Oberthür and Pallemmaerts (Eds.), cited *supra* note 11, pp. 151-177, p. 153.

²²⁷ COM(2008) 18, cited *supra* note 223, paras 2 and 13.

²²⁸ COM(2008)18 final, cited *supra* note 26, at 3 and 8. Art. 4(1) of the Directive 2009/31/EC, cited *supra* note 32, which reads as follows: "Member States shall retain the right to determine the areas from which storage sites may be selected pursuant to the requirements of this Directive. This includes the right of Member States not to allow for any storage in parts or in the whole of their territory."

Besides creating an enabling legal framework for CCS, the Package also seeks to provide economic incentives and encourage the setting up of a network of demonstration plants across Europe. This is important given that CCS is very costly and has thus far been applied globally only in two large-scale installations.²²⁹ These provisions also foreshadow the idea of extending the network also in key third countries,²³⁰ thus also embodying a bilateral external dimension. Of particular relevance is a provision of the ETS Directive to set aside up to 300 million EUAs supporting up to 12 CCS demonstration projects.²³¹ The precondition for the award of the free EUAs for the CCS demonstration projects is verified avoidance of carbon dioxide emissions.²³² At current EUA prices in the € 15 range,²³³ this constitutes a EU “subsidy” of about € 4.500 million, or € 375 million per demonstration project. In general, CCS facilities will be covered by the EU ETS from 2013 onwards and, like the rest of the power sector, they will not receive EUAs for free.²³⁴ However, CCS facilities will not need to surrender EUAs for stored emissions, which provides a long-term economic incentive for this technology.²³⁵ In addition, the new guidelines on State Aid for environmental protection,²³⁶ combined with the existence of the CCS Directive, facilitate Member State support for demonstration projects. In particular, the guidelines state that “the means to support [CCS] (...) could constitute state aid but (...) it is too early to lay down guidelines relating to the authorisation of any such aid. (...) the Commission will have a generally positive attitude towards State aid for such projects.”²³⁷

A. Environmental Integration Dimensions

The CCS Directive focuses on geological storage of carbon dioxide,²³⁸ providing for the removal of unintended barriers in existing legislation (notably, on waste and water).²³⁹ It further explains its linkages with existing EU environmental law, clarifying that the Integrated Pollution Prevention and Control (IPPC) Directive²⁴⁰ applies to capture²⁴¹ – given that it presents similar risks than chemical and power generation sectors²⁴² – and the Environmental Impact Assessment (EIA) Directive²⁴³ applies to capture and transport, as well as to storage sites²⁴⁴ – given that it presents

²²⁹ Metz, cited *supra* note 61, p. 141.

²³⁰ Chiavari, cited *supra* note 227, p. 159; Art. 38(2) of Directive 2009/31/EC, cited *supra* note 32, on the review of the Directive, where the Commission is mandated to report, among other things, on the “prospects for geological storage of CO₂ in third countries”.

²³¹ Skjaereth and Wettstad, cited *supra* note 32, p. 76.

²³² Art. 10a.8 of Directive 2009/29/EC, cited *supra* note 30.

²³³ Pointcarbon, <www.pointcarbon.com>, accessed 21 Feb. 2011.

²³⁴ Art. 10a.3 of Directive 2009/29/EC, cited *supra* note 30.

²³⁵ *Ibid.*, preambular paras. 19-20 and 39, and Art. 12.3(a).

²³⁶ Commission, “Community Guidelines on State aid for environmental protection”, cited *supra* note 112.

²³⁷ *Ibid.*, preambular para 69.

²³⁸ For a more technical discussion, see Schurmans and van Vaerenbergh, “The new proposed EU legislation on geological carbon capture and storage (CCS): a first impression of the Commission’s Proposed Framework on CCS”, 17 *European Energy and Environmental Law Review* (2008), 90-105.

²³⁹ Oberthür and Pallemmaerts, “The EU’s internal and external climate policies: a historical overview,” cited *supra* note 70, p. 51. Specifically, amendment to Waste Framework Directive (Directive 2006/12/EC on waste [2006] OJ L114/9) and to Regulation on Shipment of Waste (Regulation (EC) No 1013/2006 on shipments of waste [2006] OJ L190/1) to exclude CO₂ captured and transported for the purposes of geological storage from their scope of application; and amendment to Water Framework Directive (Directive 2000/60 establishing a framework for Community action in the field of water policy [2000] OJ L327/1) to allow injection of CO₂ into saline aquifers for the purposes of geological storage, which is still subject to EU law provisions on the protection of groundwater: Directive 2009/31/EC, cited *supra* note 32, preambular para 46.

²⁴⁰ Directive 2008/1/EC concerning integrated pollution prevention and control [2008] OJ L24/8.

²⁴¹ Preambular para. 16 of Directive 2009/31/EC, cited *supra* note 32.

²⁴² COM(2008)18 final, cited *supra* note 26, at p. 2.

²⁴³ Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment [1985] OJ L175 (EIA Directive).

²⁴⁴ Preambular para. 17 of Directive 2009/31/EC, cited *supra* note 32.

similar risks to transport of natural gas.²⁴⁵ It is worth recalling that EIA outcomes will not necessarily result in specific permit conditions, as the obligation for authorities under the EIA Directive is to take the outcomes of the assessment into account,²⁴⁶ leaving them broad discretion in determining the substantive implications of the exercise.²⁴⁷ Furthermore, liability for local environmental damage caused by CCS is regulated by the Environmental Liability Directive,²⁴⁸ and complemented by the inclusion of storage sites under ETS Directive.²⁴⁹

In terms of internal environmental integration, the regulatory framework for CCS is premised on the selection of storage sites that aims to ensure the absence of significant risk of leakage and significant environmental or health risk.²⁵⁰ The selection is preceded by an assessment taking into account proximity of the proposed project site to valuable natural resources, such as protected areas included in the Natura 2000 network, potable groundwater and hydrocarbons.²⁵¹ It also includes a risk assessment composed of exposure assessment²⁵² and effects assessment,²⁵³ as well as other factors that could pose a hazard to human health or the environment.²⁵⁴ The central regulatory tool is the storage permit, which is subject to review by the Commission (leading to a non-binding opinion)²⁵⁵ and viewed as an exercise to enhance public confidence.²⁵⁶ Several environmental sustainability guarantees are then set out by the CCS Directive. The application to obtain the permit needs to include a description of measures to prevent 'significant irregularities',²⁵⁷ which are defined as any irregularity in the injection or storage operation implying a risk to the environment or human health.²⁵⁸ Permit conditions include observance of other relevant EU legislation.²⁵⁹

Environmental safety is further guaranteed by the requirement to ensure that no waste or other matter may be added to the carbon dioxide stream, and that concentrations of incidental and added substances do not pose a significant risk to the environment or breach requirements of other applicable Union law.²⁶⁰ Monitoring to be carried out by the operator includes the surrounding environment for the purpose of, *inter alia*, detecting significant adverse effects, in particular to drinking water, human populations and users of surrounding biosphere.²⁶¹ Member States' competent authorities are to check compliance with such monitoring obligations.²⁶²

It should be also noted that provisions on public participation can serve to ensure internal environmental integration: in the case of the CCS Directive, a succinct provision on access to

²⁴⁵ COM(2008)18 final, cited *supra* note 26, at p. 2.

²⁴⁶ Schurmans and Vaerenbergh, cited *supra* note 238, at 95.

²⁴⁷ On interactions between the CCS Directive and the IPPC, EIA and waste directives, see de Graaf and Jans, "Environmental law and EEC in the EU and the impacts on the Netherlands" in Roggenkamp and Woerdman, cited *supra* note 226, pp. 157-184.

²⁴⁸ Preamble para. 30 of Directive 2009/31/EC, cited *supra* note 32.

²⁴⁹ *Ibid.*, Art. 17(2).

²⁵⁰ *Ibid.*, Art. 4(4).

²⁵¹ *Ibid.*, Art. 4(3) and Annex I, Step 1(j).

²⁵² *Ibid.*, Art. 4(3) and Annex I, Step 3.3.2. This takes into account the characteristics of the environment and distribution and activities of human population above the storage complex.

²⁵³ *Ibid.*, Annex I, Step 3.3.3. This takes into account the sensitivity of particular species, communities or habitats linked to potential leakage events.

²⁵⁴ *Ibid.*, Annex I, Step 3.3.1(e). See Skjaerseth and Wettstad, cited *supra* note 70, p. 97.

²⁵⁵ Directive 2009/31/EC, cited *supra* note 32, Art. 10.

²⁵⁶ Skjaerseth and Wettstad, cited *supra* note 70, p. 99.

²⁵⁷ Art. 7(5) of Directive 2009/31/EC, cited *supra* note 32.

²⁵⁸ *Ibid.*, Art. 3(17).

²⁵⁹ *Ibid.*, Art. 8.1(a).

²⁶⁰ *Ibid.*, Arts. 12(1)(b)-(c).

²⁶¹ *Ibid.*, Art. 13(1)(e).

²⁶² *Ibid.*, Art. 13.

information²⁶³ may arguably facilitate the role of the public as watchdog for the overall environmental sustainability of CCS activities. The requirement for Member States to make publicly available environmental information related to the geological storage of carbon dioxide²⁶⁴ is coupled with pre-existing public participation requirements under the EIA and IPPC Directives, in as far as these two instruments apply to CCS activities. It is, however, doubtful whether sufficient stakeholder involvement is provided for, given that under the EIA Directive there is no provision for consultation before environmental information is provided by the developer, so that there is no opportunity for public input when the necessity and scope of an environmental impact assessment is determined.²⁶⁵

B. International dimensions

There are important international dimensions linked to the legislative effort by the EU to ensure internal environmental integration with respect to CCS. CCS is being discussed in several international fora.²⁶⁶ In addition to the ongoing discussions under the UNFCCC and the Kyoto Protocol, the international regime on ocean dumping²⁶⁷ was amended to allow CCS in sub-seabed geological formations.²⁶⁸ In addition, the EU prohibits storage in the water column and beyond the areas under the jurisdiction of its Member States,²⁶⁹ taking on board the concerns raised within the Convention on Biological Diversity²⁷⁰ and by the decisions of the Parties to the OSPAR Convention to prohibit placement of carbon dioxide in the water column and on the seabed.²⁷¹ Both sets of international developments were explicitly quoted in the preamble of the CCS Directive.²⁷²

One of the purposes of the CCS Directive is to bring a ‘pioneering’ example of domestic legislation inspired by internal environmental integration to the multilateral environmental negotiations table, so as to provide a source of inspiration for the development of international law and of national law.²⁷³ Indeed, the recent EU submission to the UNFCCC Subsidiary Body for Scientific and Technological Advice stresses that industrialized countries can ‘take the lead’ in developing and deploying CCS, mentioning the CCS Directive as “a useful example for enabling CCS in other jurisdictions, respecting legal, cultural, social and administrative differences.”²⁷⁴ There the EU outlines various suggestions for the inclusion of CCS in the CDM, based on its own legal tools for

²⁶³ Ibid., Art. preambular para 22 and Art. 26.

²⁶⁴ Ibid., Art. 26.

²⁶⁵ Lee, *EU Environmental Law: Challenges, Change and Decision-Making* (Hart 2005), p. 172.

²⁶⁶ On questions of applicable international law, see Brus, “Challenging complexities of CCS in public international law” in Roggenkamp and Woerdman, cited *supra* note 226, pp. 19-60.

²⁶⁷ 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 36 ILM 1 (1997).

²⁶⁸ See IMO, “Report of the 31st Consultative Meeting of the Parties to the London Convention & 4th Meeting of Contracting Parties to the London Protocol” (30 Nov. 2009) LC 31/15, at Annex 5: Resolution Lp.3(4) on the Amendment to Art. 6 of the London Protocol.

²⁶⁹ Preambular para 18 and Arts. 2(3)-(4) of Directive 2009/31/EC, cited *supra* note 32.

²⁷⁰ Report of the second meeting of the Ad Hoc Technical Expert Group (AHTEG) on biodiversity and climate change, (28 Apr. 2010) UN Doc UNEP/CBD/SBSTTA/14/INF/21, which at para 162 reads: “The biological and chemical implications of deep-sea injection of carbon dioxide, associated with carbon capture and storage, are at present largely unknown, but could have significant adverse consequences for marine organisms and ecosystems in the deep sea. Leakage from carbon storage on the sea bed could increase ocean acidification, which could have large-scale effects on marine ecosystems, including coral reefs.”

²⁷¹ Ospar Commission, OSPAR Decision 2007/1 to Prohibit the Storage of Carbon Dioxide Streams in the Water Column or on the Sea-bed

²⁷² Preambular paras. 12-14 of Directive 2009/31/EC, cited *supra* note 32.

²⁷³ Which does not seem to have gone unnoticed, as specific references to EU domestic legislative initiatives were mentioned in the submissions on CCS by Indonesia and Norway, in UNFCCC, Views related to carbon dioxide capture and storage in geological formations as a possible mitigation technology, Submission from Parties (13 April 2010) UN Doc FCCC/SBSTA/2010/MISC.2, at pp. 21 and 25 respectively.

²⁷⁴ Ibid. at pp. 32-33.

site-selection, monitoring, allocation of responsibility to one entity only, EIA, risk assessment, requirements for the composition of carbon dioxide streams, and liability.²⁷⁵ The EU also links its available support to developing countries in terms of bilateral external action, mentioning its readiness to provide capacity-building and engage in collaborative research and development, exchange of views on policy issues including legal frameworks, as well as opportunities for scientific collaboration between EU and non-EU researchers on CCS.²⁷⁶ This reflects the more generic reference to technology cooperation with key countries that was made in the CCS Directive preamble.²⁷⁷

Proponents of CCS attempted, since 2005, to have the technology, or at least pilot projects, included under the CDM in order to secure the necessary financial political support to carry out CCS projects.²⁷⁸ These attempts were unsuccessful until late 2010, when the UN Climate Change Conference in Cancun reached agreement that projects involving CCS in geological formations are, in principle, eligible under the CDM.²⁷⁹ However, the decision is not yet operational but requires further negotiations to resolve Kyoto Protocol Parties' outstanding concerns.²⁸⁰ Such concerns still include: non-permanence, including long-term permanence; measuring, reporting and verification; environmental impacts; project activity boundaries; international law; liability; the potential for perverse outcomes; safety; as well as insurance coverage and compensation for damages caused due to seepage or leakage.²⁸¹

Some of the criticism to inclusion of CCS under the CDM has also been based on moral grounds, namely that developing countries should not be used as testing grounds for unproven technology. Pressure on the EU to legislate on CCS thus originated not only from the lack of progress under the UNFCCC and industries lobbying to allow the first demonstration projects and facilitate the long-term commercialization of this technology, but also from the need to show global leadership and address moral concerns. Against this background, it is worth highlighting that the EU is also using its bilateral external relations with a view to test its legislation and promote CCS with partner countries, notably China. The 2005 EU-China Joint Declaration on Climate Change comprises time-bound goals for cooperation in developing and demonstrating CCS technology and reducing the cost of key energy technologies by 2020, as well as providing for regular follow-up at "suitably high-level...including in the context of Summits."²⁸²

6. RENEWABLE ENERGY

In addition to the CCS Directive, provisions emphasising internal environmental integration can be found in the Renewables Directive, which has three objectives: environmental sustainability, energy

²⁷⁵ Ibid., at pp. 33-40.

²⁷⁶ Ibid., at pp. 41-42.

²⁷⁷ Preamble para. 7 of Directive 2009/31/EC, cited *supra* note 32.

²⁷⁸ Kyoto Protocol Decision 1/CMP.2, (UN Doc. FCCC/KP/CMP/2006/10/Add.1, 2 March 2007) paras. 18-25. See also "Summary of the Twelfth Conference of the Parties to the UN Framework Convention on Climate Change and Second Meeting of the Parties to the Kyoto Protocol: 6-17 November 2006", 12(318) *The Earth Negotiations Bulletin* (20 November 2006), at 12.

²⁷⁹ Kyoto Protocol Decision 7/CMP.6, "Carbon dioxide capture and storage in geological formations as clean development mechanism project activities," advance unedited version <http://unfccc.int/files/meetings/cop_16/application/pdf/cop16_cmp_ccs.pdf>, accessed 21 Feb. 2011.

²⁸⁰ Ibid., para. 2, requesting the UNFCCC Subsidiary Body for Scientific and Technological Advice to elaborate the necessary modalities and procedures by the next UN Climate Change Conference at the end of 2011

²⁸¹ Ibid., para. 1 which makes reference to Kyoto Protocol Parties' outstanding concerns identified in Kyoto Protocol Decision 2/CMP.5, *Further Guidance Related to the Clean Development Mechanism* (UN Doc FCCC/KP/CMP/2009/21/Add.1, 30 Mar. 2009) para. 29.

²⁸² "Joint Declaration on Climate Change between China and the European Union" following the 8th EU-China Summit (Presse 226) 12009/05, 7 Sept. 2005, <<http://register.consilium.europa.eu/pdf/en/05/st12/st12009.en05.pdf>>, paras. 7 and 1.

security and technology innovation.²⁸³ In the context of the Package, the Renewables Directive seeks to increase the share of renewable energy to 20% of the EU's primary energy consumption and to 10% of the energy used in the transport sector by 2020. This section will first introduce the legal scheme to support the achievement of the Member States' national renewables targets, and then focus on the sustainability criteria for biofuels as a salient feature of the Package both in terms of internal environmental integration, as well as for its multifaceted international dimensions.

Earlier EU energy law was fragmented, with EU legislation adopted on renewable electricity,²⁸⁴ fuels,²⁸⁵ and heat,²⁸⁶ and conceived as distinct from climate change and environmental considerations.²⁸⁷ One of the important features of the Package is that it takes into account the integrated nature and inter-relationships between energy policy (comprising energy efficiency, energy security and renewables) and climate policy.²⁸⁸ Furthermore, the new Renewables Directive incorporates all forms of renewable energy under a single legal framework. The shift towards a more integrated approach is also reflected in the new legal basis for the EU energy policy introduced by the Treaty of Lisbon, where "regard for the need to preserve and improve the environment" is called for in all aspects of energy policy, namely: ensuring the functioning of the energy market; ensuring security of energy supply in the Union; promoting energy efficiency and energy saving and the development of new and renewable forms of energy; and promoting the interconnection of energy networks.²⁸⁹ It should be noted, however, that the TFEU has not changed the unanimity rule required for adopting measures that affect Member States' sources and structure of energy supply.²⁹⁰

A. NATIONAL RENEWABLE ENERGY TARGETS

The legal framework supporting the achievement of the EU's 2020 target for renewable energy comprises five elements: obligatory national targets for each Member State to achieve by 2020; national renewable energy action plans; flexible mechanisms allowing for cross-financing between Member States;²⁹¹ administrative and regulatory reforms; as well as sustainability criteria for biofuels.²⁹² For the first time, Member States are to coordinate their approaches to a range of planning, certification and educational issues associated with the renewable energy sector (on the basis of both obligatory provisions and recommendations), against a new single target, rather than separate targets for electricity and transport.²⁹³ The national targets contribute to a target of at least 20% share of energy from renewable sources in the EU's gross final energy consumption in 2020, which should be achieved also through energy efficiency and energy saving.²⁹⁴ The legally binding and differentiated national targets for each Member States (see Table 1) represent a notch up in

²⁸³ Howes, "The EU's new Renewable Energy Directive", in Oberthür and Pallemarts (Eds.), cited *supra* note 11, pp. 117-150, p. 117; see also ch. 7 in Dhondt, cited *supra* note 37, pp. 441-449.

²⁸⁴ Directive 2001/77/EC, [2001] OJ L283/33. For a history of the 2001 renewables directives, see Lauber, "2004. REFIT and RPS: options for a harmonised community framework", 32 *Energy Policy* (2004), 1405-1414.

²⁸⁵ Directive 2003/30/EC, [2003] OJ L123/42.

²⁸⁶ Directive 2002/91/EC, [2002] OJ L001 and Directive 2004/8/EC, [2004] OJ L52/50.

²⁸⁷ Howes, cited *supra* note 283, p. 117.

²⁸⁸ *Ibid.*, p. 125.

²⁸⁹ TFEU, Art. 194.

²⁹⁰ TFEU, Art. 192(2)(c).

²⁹¹ For a discussion on these market-based provisions of the Renewables Directive and their compatibility with the free movement of goods within the EU, see Johnston, Neuhoff, Fouquet, Ragwitz and Resch, "The proposed new EU Renewables Directive: interpretation, problems and prospects", 17 *European Energy and Environmental Law Review* (2008), 126-145.

²⁹² Howes, cited *supra* note 283, p. 126.

²⁹³ *Ibid.*, pp. 127 and 136-137.

²⁹⁴ Art. 3(1) of Directive 2009/28/EC, cited *supra* note 29.

ambition from previously “indicative” targets,²⁹⁵ although the Commission only has weak powers concerning their implementation – it is tasked with evaluating the implementation of the national plans and making recommendations.²⁹⁶ The national action plans to be developed by Member States are to determine sectoral targets for the share of energy from renewables consumed in transport, electricity, heating and cooling in 2020 and the measures to be taken to achieve national overall targets.²⁹⁷ Thus far, it seems all Member States are on track to achieve their national targets – in fact, the latest assessment by the Commission indicates that renewable energy will increase faster than in the past and that the EU could even exceed the 20% target by 2020.²⁹⁸

As mentioned above, the Renewables Directive introduced flexible mechanisms aimed at facilitating the achievement of the national targets. While most of the mechanisms focus on cooperation between the Member States, they also make it possible to count renewable electricity purchased from third countries against the national target of a Member State. Article 6 enables *statistical transfers* between Member States. This mechanism can be compared to emissions trading under Article 17 of the Kyoto Protocol whereby one country transfers part of its emissions quota to another country. Under Article 7 of the Renewables Directive, two or more Member States (also involving private actors) can also implement *joint projects* that relate to the production of energy from renewable electricity, heating or cooling.²⁹⁹ This mechanism is similar to Joint Implementation under Article 6 of the Kyoto Protocol, which enables two countries with emission reduction targets to implement climate-friendly projects and agree on the transfer of the ensuing emission reductions. Article 11 of the Renewables Directive also makes it possible to create *joint support schemes*, whereby two or more Member States may decide to join or partly coordinate their national support schemes, and a certain amount of renewable energy produced in the territory of one participating Member State may count towards the national target of another Member State.³⁰⁰

An international dimension to the Renewables Directive emerges from the third flexibility mechanism, which focuses on *joint projects between EU Member States and third countries*.³⁰¹ While this provision will be of limited practical relevance to meet the 2020 targets given that the EU is on track to meet or exceed its 20% target, Article 9 establishes a framework for third-country projects which may be important to meet targets beyond 2020, and represents a lifeline to projects such as DESERTEC,³⁰² which is trying to deploy renewable electricity capacity in North Africa for European consumption. The mechanism established by Article 9 of the Renewables Directive resembles the CDM, which allows developed countries to benefit from carbon credits generated in developing countries. Importantly, joint projects between EU Member States and third countries allow third countries to access finance for renewables infrastructure.³⁰³

It should further be noted that bilateral agreements between the EU and third States or regions may provide a readily available basis for supporting renewables in third countries: a standard clause in

²⁹⁵ As opposed, for example, to Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market [2001] OJ L283/33.

²⁹⁶ Scott, “The Multi-level governance of climate change” (Law and Governance in Europe Working Paper Series 009/10) p. 48. Forthcoming in Craig and de Búrca, Eds., *The Evolution of EU Law* (OUP).

²⁹⁷ Art. 4 of Directive 2009/28/EC, cited *supra* note 29.

²⁹⁸ Commission, “Renewable Energy: Progressing towards the 2020 target,” (Communication) COM(2011)31 final, 31 Jan. 2011.

²⁹⁹ Arts. 7.1 and 7.2 of Directive 2009/28/EC, cited *supra* note 29. Art. 7.2 refers to projects becoming operational “after the date of entry into force of this Directive,” which took place on 25 Jun. 2009.

³⁰⁰ *Ibid.*, Art. 11.

³⁰¹ *Ibid.*, Art. 9(1).

³⁰² The DESERTEC Foundation was established on 20 January 2009 as a non-profit foundation with the aim of promoting the implementation of the global DESERTEC Concept “Clean Power from Deserts” all over the world. See DESERTEC website at <<http://www.desertec.org>> accessed 9 Nov. 2010.

³⁰³ Howes, cited *supra* note 283, pp. 134-135.

most of the EU's bilateral agreements calls for cooperation concerning renewable energy.³⁰⁴ This type of clause may allow the EU to support the implementation of key provisions of the Renewables Directive beyond its borders, with the consent of the third country/region involved, in the framework of established institutional structures for ongoing dialogue and cooperation.³⁰⁵ The international dimension of the Renewables Directive becomes even more evident when focusing attention on its unprecedented sustainability criteria for the production of biofuels, discussed next.

B. BIOFUELS SUSTAINABILITY CRITERIA

As explained above, the Renewables Directive aims to increase the share of renewable energy in the transport sector to 10% by 2020. This includes biofuels (in other words, fuels of renewable and biological origin, including woodfuel, charcoal, livestock manure, biogas, bio-hydrogen, bio-alcohol, microbial biomass, agricultural wastes and byproducts, and energy crops), which have been in the international spotlight for several reasons and were subject to a fierce debate also within the EU during the negotiations for the Package.³⁰⁶ This is because concerns related to biofuels have been raised regarding food security, adverse environmental impacts and deforestation, additional pressure on dwindling land and water resources, potential negative effects on indigenous and local communities and small-holder farmers, as well as introduction and spread of genetically modified organisms or of invasive alien species.³⁰⁷ In addition, the debate continues on whether and to what extent the use of biofuels reduces greenhouse gas emissions if the whole lifecycle analysis is considered.³⁰⁸ In an effort to address these concerns, and to ensure that the 10% target for biofuels implemented by the Package avoids negative environmental impacts, particularly deforestation and loss of biodiversity, the EU introduced sustainability criteria for their production. These criteria were one of the most innovative features of the Package and they are also reflected in the Fuel Specification Directive, which includes, *verbatim*, all language from the Renewables Directive applicable to biofuels.³⁰⁹

The decision of the EU to adopt pioneering sustainability criteria for biofuels should be placed in the broader context of ongoing negotiations in various multilateral fora on possible international standards in this respect. In the context of the CBD, entrenched positions have been presented as to whether international standards should be developed to ensure maximizing the positive and minimizing the negative impacts of biofuels on the environment, biodiversity and local and indigenous communities.³¹⁰ The EU continues to support the development of international standards

³⁰⁴ See for instance, Arts. 109 and 111 of the Stabilisation and Association Agreement with Serbia (29 Apr. 2008); Art. 74 of the Euro-Mediterranean Agreement with Jordan (15 May 2002); Art. 57 of the Agreement on Trade, Development and Cooperation with South Africa (4 Dec. 1999); and Art. 16 of the Framework Agreement for Trade and Cooperation with South Korea (30 Mar. 2001).

³⁰⁵ Morgera and Marín Durán, *Environmental Integration in the EU External Relations: Beyond Multilateral Dimensions* (Hart, forthcoming 2011).

³⁰⁶ "NGOs slam draft version of EU biofuel law" EurActive (11 Jan. 2008)

<<http://www.euractiv.com/en/transport/ngos-slam-draft-version-eu-biofuel-law/article-169470>> accessed 21 Feb. 2011.

³⁰⁷ CBD Subsidiary Body on Scientific, Technical and Technological Advice, "New and emerging issues relating to the conservation and sustainable use of biodiversity: biodiversity and liquid biofuel production" (25 Apr. 2007) UN Doc. UNEP/CBD/SBSTTA/12/9. On the international debate on biofuels, see also Morgera, Kulovesi, and Gobena (Eds.), *Case Studies on Bioenergy Policy and Law: Options for Sustainability*, FAO Legislative Study No. 102 (FAO, 2010), pp. 15-34.

³⁰⁸ For examples see Fargione et al., "Land Clearing and the Biofuel Carbon Debt" *Science* (29 February 2008), at 1235-1238.; and Searchinger et al. "Use of U.S. Croplands for Biofuels Increases Greenhouse Gases Through Emissions from Land-Use Change," *Science* (29 February 2008), at 1238-1240.

³⁰⁹ Arts. 7(b)-(d) and Annex IV 17 of Directive 2009/30/EC, cited *supra* note 31, which embodies the same provisions that can be found in the Directive 2009/28/EC, cited *supra* note 29, Arts. 17-19 and Annex V. The Renewables Directive contains additional text for bioliquids.

³¹⁰ Morgera, "CBD COP 10: Towards 2010 Implementation", 40 *Env. Policy and Law* (2010) 281-288, at 284.

under the CBD,³¹¹ highlighting the Renewables Directive and its own sustainability criteria as relevant examples in that respect. At the same, the sustainability criteria aim to affect biofuels production and land-use decisions in third countries importing biofuels to the EU, thereby bringing to the fore questions concerning the compatibility of the criteria with WTO law. The following subsection will thus in turn look into the environmental integration aspects of the criteria, as well as their international dimension both in terms of WTO law compatibility and of inclusion in the EU bilateral external action.

i. Environmental Integration

Like the CCS Directive, the argument can be made that the EU adopted legislation on biofuels with a view to showing leadership on a controversial international issue. From this perspective, the provisions in the Renewables Directive can be seen as an attempt to ensure internal environmental integration with a view to providing a good-practice example to other countries to inspire national action in partner countries or to influence ongoing international negotiations. The biofuels sustainability criteria purposely contain references to multilateral environmental agreements and related international processes. Specifically, the criteria concern land with high biodiversity value and land with high carbon stock also requiring greenhouse gas emission savings (of at least 35%³¹²). While these two sets of criteria apply both to imported biofuels and to those produced within the EU, an additional criteria of cross-compliance applies only to the latter. Thus, for biofuels produced within the EU, the Renewables Directive requires compliance with existing requirements under EU environmental law for agriculture, including protection of groundwater and surface water quality and social requirements.³¹³

With regards to biodiversity concerns, the Directive adopted a three-tiered approach. First, it requires that biofuels and bioliquids must not be made from raw material obtained from land with high biodiversity value (according to the definition of primary forest used by the FAO in its Global Forest Resource Assessment,³¹⁴) and protected areas, or highly biodiverse grassland.³¹⁵ With regards to non-natural highly biodiverse grasslands, an exception is possible if harvesting of raw material was necessary to preserve the area's grassland status.³¹⁶ Second, for other biodiversity dimensions that are not explicitly covered by the sustainability criteria, the Directive provides complementary monitoring requirements: Member States are to report on estimated impacts of biofuels production on biodiversity, water resources, water quality and soil quality within their territories,³¹⁷ while the Commission is expected to report on possible broader impacts in Member States and third countries that are a significant source of raw material for biofuels consumed within the Union as to their ratification and implementation of other relevant international agreements,

³¹¹ Summary of the fourteenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice to the Convention on Biological Diversity: 10-21 May 2010, 9(514) *The Earth Negotiations Bulletin*, cited *supra* note 247, 24 May 2010, at p. 12.

³¹² Art. 17(2) of Directive 2009/28/EC, cited *supra* note 29. The provision indicates that GHG saving will be of at least 50% by 2012, and 60% by 2018.

³¹³ *Ibid.*, Art. 17(6), with refers specifically to compliance with heading 'Environment' in part A and in point 9 of Annex II to Council Regulation (EC) 73/2009 establishing common rules for direct support schemes for farmers under the common agricultural policy and establishing certain support schemes for farmers (1) and in accordance with the minimum requirements for good agricultural and environmental condition defined pursuant to Art. 6(1) of that Regulation, [2009] OJ L30/16. See also, Renewables Directive, cited *supra* note 23, preambular para. 74.

³¹⁴ Preambular para 69 of Directive 2009/28/EC, cited *supra* note 29.

³¹⁵ *Ibid.*, Art. 17(3).

³¹⁶ *Ibid.*, preambular para. 69; see also Commission, "The practical implementation of the EU biofuels and bioliquids sustainability scheme and on counting rules for biofuels" (Communication) COM(2010)160/02, 19 June 2010, [2010] OJ C160/8, at 8.

³¹⁷ Art. 22(3)(i) Directive 2009/28/EC, cited *supra* note 29.

such as the Cartagena Protocol on Biosafety and the Convention on the International Trade in Endangered Species.³¹⁸

Another relevant criteria at the intersection of biodiversity and climate change concerns the prohibition to derive biofuels from raw material obtained from land with high carbon stock, namely land that had in January 2008 and no longer has the status of wetlands (as defined in the Convention on Wetlands of International Importance³¹⁹), continuously forested areas or areas with 10-30% canopy cover.³²⁰ Using such land for biofuels production would result in a negative net greenhouse gas emission reduction impact given that carbon dioxide is released into the atmosphere as a result of land conversion.³²¹ The Commission has indicated that monitoring compliance with land-related criteria can take the form of aerial photographs, satellite images, maps, land register entries and site surveys.³²²

While noting the importance of broader land use issues,³²³ the final compromise did not provide for the inclusion of other environmental or social concerns in the sustainability criteria. Instead, the EU tasks the Commission with biannual reports on the impact on social sustainability in the EU and in third countries of increased demand for biofuel, on the impact of the EU' biofuel policy on the availability of foodstuffs at affordable prices, in particular for people living in developing countries, and wider development issues, including the respect of land-use rights and implementation of listed human rights and labour conventions.³²⁴ Thus, the matter is kept under review for the time being, with the possibility in the short-term (in 2012) for the Commission to propose 'corrective action, in particular if evidence shows that biofuels production has a significant impact on food prices.'³²⁵ Similarly, the Commission is to report in 2012 and propose corrective action as to whether it would be 'feasible and appropriate to introduce mandatory requirements in relation to air, soil and water protection, taking into account the latest scientific evidence and the EU international obligations.'³²⁶ This more cautious approach certainly reflects current impasses in multilateral negotiations, where discussions of social issues related to biofuels, such as land tenure and food prices, as well as impacts on indigenous and local communities, remain very controversial.³²⁷

As to the level of ambition of the criteria, on the one hand it should be further noted that preference is given to second-generation biofuels, which are considered more promising in terms of reduced greenhouse gas emissions,³²⁸ in the Directive: the contribution made by biofuels produced from wastes, residues, non-food cellulosic material, and ligno-cellulosic material is considered to be twice that made by other biofuels in meeting the 10% target.³²⁹ On the other hand, however, the

³¹⁸ Ibid., Art. 17(7).

³¹⁹ Ibid., preambular para 73.

³²⁰ Ibid., Art. 17(4).

³²¹ Ibid., preambular para 70.

³²² COM(2010)160/02, cited *supra* note 316, at 10.

³²³ Preambular paras. 85 and 89 of Directive 2009/28/EC, cited *supra* note 29. The paragraphs refer to relevant questions of land degradation and desertification.

³²⁴ Ibid., Art. 17(7).

³²⁵ Ibid., Art. 17(7) last subpara.

³²⁶ Ibid., Art. 18(9)(b).

³²⁷ Disagreement on these issues has to some extent been overcome in the context of the CBD, since the last meeting of the Conference of the Parties in late 2010 addressed biofuels-related questions linked to food and energy security, as well as "the consideration of land tenure and resource rights, including water, where relevant for the CBD implementation, and in particular the implications for indigenous and local communities" (Decision X/37 Biofuels and biodiversity (2010), para. 2).

³²⁸ Organization for Economic Cooperation and Development and International Energy Agency, "Biofuel Support Policies: An Economic Assessment" (OECD, Paris, 2008), at 49.

³²⁹ Art. 21(2) of Directive 2009/28/EC, cited *supra* note 29.

sustainability criteria, at least for the time being, do not apply to solid biomass.³³⁰ The exclusion of solid biomass, thus, undermines the effectiveness of the sustainability criteria in achieving their stated objectives, because the use of solid biomass³³¹ in the EU is several times higher than the use of biofuels,³³² and biogas³³³ covered by the criteria.

Provisions on public participation may also be instrumental in ensuring internal environmental integration in the context of the EU's biofuels sustainability criteria. The Renewables Directive requires that Member States inform the public on the availability and environmental benefits of all different renewable sources of energy for transport.³³⁴ In addition, the Commission is to create an online public transparency platform to facilitate and promote cooperation between Member States and make public relevant information that the Commission or a Member State deems to be of key importance to the Directive and to the achievement of its objectives,³³⁵ although there is no specific mention of the sustainability biofuels criteria. The Commission has also stressed that although the Directive does not require Member States to make information public, they are encouraged to publish biofuels sustainability information in a consistent manner for all fuels, taking into account possible commercially sensitive character of a company's specific information.³³⁶

Overall, the participation provisions do not seem sufficiently strong, and seem to confirm the impression that while the EU's biofuels sustainability criteria take into account a variety of environmental concerns on the basis of international environmental processes, in an attempt to satisfy internal environmental integration, they have prioritized certain (but not all) broader environmental and social concerns. Nonetheless, the Package has left the door open for a more ambitious approach in the future, allowing for early review to reflect progress in multilateral negotiations. Two broader considerations also come into play in assessing the criteria's effective contribution to environmental sustainability. First, it remains to be seen if the existing criteria will be able to influence biofuel production in third countries, given the reliance on economic operators and independent auditors for their enforcement, and the practical difficulties in overseeing their application on the part of the Commission, considering its limited resources for fulfilling its monitoring obligations.³³⁷ Second, corrective measures envisaged by the Directive in case of negative reports on sustainability in third countries will most likely entail a policy declaration, to avoid any WTO law incompatibility issues,³³⁸ which are discussed next.

ii. WTO Law Compatibility

During the preparatory process for the Renewables Directive, a number of developing countries raised concerns over the compatibility of the planned biofuels sustainability criteria with WTO law, highlighting they could violate Article 2 of the WTO Agreement on Technical Barriers to Trade and impose "unjustifiably complex requirements on producers" and "impinge disproportionately on

³³⁰ In February 2010 the Commission indicated that it did not intend to recommend binding sustainability criteria for solid biomass and biogas used in electricity, heating and cooling, but suggest voluntary criteria for Member States to include on national schemes, with the possibility to review this decision in 2011. "Commission adopts Biomass Sustainability Report" (Europa Rapid Press Release) IP/10/192, 25 Feb. 2010.

³³¹ "Solid biomass barometer, Eurobserv'ER, Nov 2010" 200 *Systèmes Solaires le journal des énergies renouvelables* (2010), at 123

³³² "Biofuels barometer – Eurobserv'ER – Jul 2010," 198 *Systèmes Solaires le journal des énergies renouvelables* (2010), at 73

³³³ "Biogas barometer, Eurobserv'ER, Nov 2010," 200 *Systèmes Solaires le journal des énergies renouvelables* (2010), at 105.

³³⁴ When the percentages of biofuels, blended in mineral oil derivatives, exceed 10% by volume, Member States shall require this to be indicated at the sales points. Art. 21(1) of Directive 2009/28/EC, cited *supra* note 29.

³³⁵ *Ibid.*, Art. 24.

³³⁶ COM(2010)160/02, cited *supra* note 316, at 6.

³³⁷ Scott, cited *supra* note 296, pp. 56-58.

³³⁸ Vedder, cited *supra* note 17, at 9.

developing countries.”³³⁹ They also argued that the criteria could violate the General Agreement on Tariffs and Trade, including its Article XX because they distort international trade without suitable scientific justification or the support of international treaties.³⁴⁰ Indeed, given that the sustainability criteria also apply to imported biofuels, they can be expected to have practical implications on production in third countries wishing to export biofuels to the growing markets in the EU - which, as discussed above, was exactly the Directive’s intention. In principle, sustainability standards seeking to impact land use in foreign countries would seem to surface questions concerning WTO law and point towards the long-standing and controversial debate on the permissibility of trade measures triggered by the way in which a product is produced.

When preparing the Renewables Directive, the Commission was aware of the potential international trade law implications of the sustainability criteria and it has been argued that the WTO aspect has been taken into consideration when drafting the Renewables Directive. According to Scott, “those familiar with the contours of WTO law will perceive in the text of the Renewables Directive efforts to align the scope and application of the sustainability criteria with the multiple requirements of WTO law.”³⁴¹ In other words, the criteria: apply both to domestic and imported products; contain a range of qualifications and exceptions in a bid to ensure that they are no more trade-restrictive than necessary; make recourse to international standards where possible; and are cognisant of the importance of WTO-imposed due process demands.³⁴² From the point of view of WTO law, it is also relevant to note that compliance with the sustainability criteria is not a precondition for placing biofuels on the EU market, although in practice it makes them uncompetitive as they cannot be counted against the 10% target. In other words, lack of compliance with these criteria does not lead to a ban on imports or use within the EU, but rather to a series of disincentives.³⁴³ Specifically non-compliant biofuels are ineligible for: meeting the biofuels targets;³⁴⁴ compliance with renewable energy obligations;³⁴⁵ receiving biofuels consumption financial support;³⁴⁶ meeting the Fuel Quality Directive greenhouse gas emissions reductions targets;³⁴⁷ investment and/or operating aid in accordance with the Guidelines on state aid for environmental protection;³⁴⁸ and the provisions for alternative-fuel vehicles.³⁴⁹

There is, however, still some uncertainty as to whether the sustainability criteria for biofuels would be considered fully compatible with WTO law. As indicated above, the question of trade measures related to the way in which a product is produced (rather than the product’s intrinsic qualities) has been highly controversial under the international trade regime for more than two decades.³⁵⁰ Another long-standing and controversial debate relates to the permissibility of extraterritorial environmental trade measures – in case of the EU’s sustainability criteria for biofuels, they aim to

³³⁹ The countries include Argentina, Brazil, Colombia, Malawi, Mozambique, Sierra Leone, Indonesia and Malaysia. See, “Open Letter to the Council, Parliament and the Commission of the European Communities” (6 Nov. 2008) <<http://www.r-e-a.net/document-library/thirdparty/081010DevelopingCountriesLettertoEU.pdf>> accessed 11 Nov. 2010.

³⁴⁰ *Ibid.*

³⁴¹ Scott, cited *supra* note 296, at 58-59.

³⁴² *Ibid.*

³⁴³ COM(2010)160/02, cited *supra* note 316, at 2-3.

³⁴⁴ Art. 17(1)(a) of Directive 2009/28/EC, cited *supra* note 29.

³⁴⁵ *Ibid.*, Art. 17(1)(b).

³⁴⁶ *Ibid.*, Art. 17(1)(c).

³⁴⁷ Art. 7 of Directive 2009/30/EC, cited *supra* note 31.

³⁴⁸ Commission, “Community guidelines on State aid for environmental protection”, cited *supra* note 112.

³⁴⁹ For E85 ethanol only, Art. 6 of Regulation 443/2009, cited *supra* note 33.

³⁵⁰ In the *Shrimp-Turtle* case it was found that such trade measures can be compatible with WTO law at least in certain circumstances. See, WTO Appellate Body report, “*United States - Import Prohibition of Certain Shrimp and Shrimp Products, Recourse to Article 21.5 of the DSU by Malaysia*” (22 Oct. 2001) WT/DS58/AB/RW.

protect biodiversity within the territory of the exporting state.³⁵¹ Furthermore, as Scott has pointed out, WTO law has evolved in a direction that mirrors the internal market law of the EU and also under the WTO, non-discriminatory trade measures may have to be justified as necessary to achieve a legitimate objective under the Agreement on Technical Barriers to Trade.³⁵² The necessity test provides the WTO dispute settlement bodies an opportunity to weigh and balance the trade-restrictive measure, including the degree of trade restrictiveness and importance of the underlying goal.³⁵³ The increasing reliance on necessity means that the standard of review exercised by the WTO dispute settlement system has become more intrusive. For the EU's biofuels sustainability criteria, the combined effect of all these considerations is that some uncertainty remains concerning their compatibility with WTO law.

iii. Bilateral External Dimension

Not only are the sustainability criteria systematically invoked by the EU in multilateral negotiations on biofuels,³⁵⁴ but they also have a bilateral international dimension. Motivated by the concern that biofuels production in third countries might not respect minimum environmental or social requirements and the aim to promote the production of biofuels and bioliquids *worldwide* in a sustainable manner,³⁵⁵ the Directive indicates that the EU will endeavour to conclude bilateral or multilateral agreements with third countries containing provisions on the sustainability criteria.³⁵⁶ This is certainly related to the difficulty for Member States to check third country operators' compliance³⁵⁷ with the sustainability criteria. The Commission thus indicated three methods to verify compliance: a national system – i.e. requesting operators to provide national authorities with data on compliance subject to independent auditing of the information submitted;³⁵⁸ a voluntary scheme recognized by the Commission for that purpose; or a bilateral or multilateral agreement concluded by the EU, recognized by the Commission for this purpose.³⁵⁹ While national systems will be based on the default values set by the Renewables Directive to show compliance with the greenhouse gas emission savings, the other two systems may also cover other sustainability issues that are not covered by the Directive.³⁶⁰ This bilateral external dimension could also be seen in the context of WTO law: in the *Shrimp-Turtle* case it was found that the US (unsuccessful) bilateral negotiations with countries targeted by its environmental trade restrictions were relevant for determining WTO law compatibility of the measure.³⁶¹

The Directive specifically requires due consideration for measures taken for the conservation of areas that provide in critical situations basic ecosystem services. It also states that the Commission may recognize areas for the protection of ecosystems or species protected by international agreements, so as to take into account land, labour and additional environmental concerns not covered by the sustainability criteria, or included in lists drawn up by intergovernmental organizations or The International Union for Conservation of Nature (IUCN) for the purposes of fulfilling the high biodiversity value land criteria.³⁶² The Commission is further required to monitor

³⁵¹ Scott, cited *supra* note 296, at 60.

³⁵² *Ibid.*, at 60-61.

³⁵³ *Ibid.*

³⁵⁴ UNEP/CBD/SBSTTA/14/12, cited *supra* note 214, para 12.

³⁵⁵ Preamble para 74 of Directive 2009/28/EC, cited *supra* note 29, emphasis added.

³⁵⁶ *Ibid.*, Art. 18(4).

³⁵⁷ *Ibid.* Art. 17(8). Communication on the practical implementation of the EU biofuels sustainability scheme, cited *supra* note 254, at 6. On the question of harmonization, see Scott, cited *supra* note 296, pp. 55-56.

³⁵⁸ Art. 18(3) of Directive 2009/28/EC, cited *supra* note 29. See also COM(2010)160/02, cited *supra* note 316, at 4.

³⁵⁹ *Ibid.*, Arts. 18(4) and 18(7).

³⁶⁰ Commission, "Communication from the Commission on voluntary schemes and default values in the EU biofuels and bioliquids sustainability scheme" COM(2010) 160/01, 19 Jun. 2010, [2010] OJ C160/1, at 4-5.

³⁶¹ *United States - Import Prohibition of Certain Shrimp and Shrimp Products, Recourse to Article 21.5 of the DSU by Malaysia*, cited *supra* note 350.

³⁶² *Ibid.*

the origin of biofuels and the impacts of their production on land use in third countries of supply with a view to analyzing the impact of increased demand for biofuels on sustainability in these countries, considering economic and environmental impacts, including on biodiversity. In light of these and other ambitious monitoring tasks,³⁶³ the Directive calls upon the Commission to maintain a dialogue and exchange information with third countries and biofuels producers, consumer organizations and civil society concerning the general implementation of the Directive.³⁶⁴

The Directive has already had visible impacts in the EU's bilateral external relations: ongoing dialogues between the EU and Latin American countries, Brazil and the US have been used to discuss biofuels sustainability criteria.³⁶⁵ In addition, the Sustainability Impact Assessments, which are used to identify trade-offs between economic growth and environmental impacts of EU's bilateral trade agreements, have addressed the issue of certification for biofuels among policy recommendation to ensure sustainability³⁶⁶ or even more specifically made reference to the Renewables Directive and its criteria as guidance for third countries.³⁶⁷ The Commission has thus pointed to the opportunity to discuss the applicability of the EU biofuels sustainability criteria to processes carried out in third countries, as a means to prevent negative environmental and social impacts arising from the trade negotiations.³⁶⁸

Overall, the international dimensions of the Package are tightly interlinked: on the one hand, the EU actively promotes a holistic approach to biofuels at the multilateral level, showcasing its sustainability criteria not only through its interventions in relevant multilateral fora; and on the other hand, it promotes their application in willing third countries, through its bilateral relations, possibly with a view to building larger consensus on the criteria from the bottom up.³⁶⁹ These combined efforts can be motivated both by internal environmental integration and by attempts to ensure compatibility with WTO law.

7. CONCLUSIONS

This analysis shows that the contribution of the EU's Climate and Energy Package to the implementation of the environmental integration principle of is, at least on paper, significant. The EU has attempted to mainstream climate change considerations into a range of sectors (external environmental integration), which is necessary given the multitude of activities and actors that must

³⁶³ Ibid., Art. 17(7), which, among other things, mandates the the Commission to monitor third countries' ratification and implementation of the Cartagena Protocol on Biosafety and the Convention on the International Trade in Endangered Species,

³⁶⁴ Ibid., Art. 23(2).

³⁶⁵ EUROLAT – Resolution of 15 May 2010, Seville (Spain), '*Tackling climate change challenges together: for an EU-LAC coordinated strategy in the framework of the UNFCCC negotiations*',

<http://www.europarl.europa.eu/intcoop/eurolat/assembly/plenary_sessions/seville_2010/adopted_docs/climat_change/817703en.pdf>, paras. 37-38; Third European Union-Brazil Summit, Stockholm, 6 October 2009 – Joint Statement, paras. 2-12, <http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/er/110440.pdf>; and 2007 EU-US Summit Statement Energy Security, Efficiency, and Climate Change,

<http://www.eeas.europa.eu/us/sum04_07/joint_statement_energy_security.pdf>. All accessed 2 Feb. 2011.

³⁶⁶ IARC, Institute for Development Policy and Management, "Trade Sustainability Impact Assessment of the Association Agreement under Negotiation between the European Community and MERCOSUR" (Final Report, Mar. 2009), p. 99; ECORYS Research and Consulting, "Trade Sustainability Impact Assessment of the Association Agreement to be negotiated between the EU and Central America" (Draft Final Report, 7 Jul. 2009), pp. 90-91.

³⁶⁷ ECORYS Research and Consulting, "Trade Sustainability Impact Assessment of the FTA between the EU and ASEAN" (Final Report, 19 Jun. 2009) Volume I, Main Findings and Recommendations, pp. 60-61.

³⁶⁸ European Commission Position Paper on the SIA of the EU-Central America Association Agreement, June 2010, at 4 and 6, <<http://trade.ec.europa.eu/doclib/html/146262.htm>>; European Commission Position Paper on the SIA of the EU-MERCOSUR Association Agreement, July 2010, <<http://trade.ec.europa.eu/doclib/html/146386.htm>>, at P. 5; European Commission Position Paper on the SIA of the EU-ASEAN FTA, June 2010, <<http://trade.ec.europa.eu/doclib/html/146294.htm>>, at p. 9. All accessed 2 Feb. 2011.

³⁶⁹ Marín Durán and Morgera, *Environmental Integration in the EU's External Relations*, cited *supra* note 305.

be engaged to effectively combat climate change and mitigate greenhouse gas emissions. The EU ETS plays an important role in this regard, as setting a price for greenhouse gas emissions is commonly viewed as one of the most important mitigation tools.³⁷⁰ The Package has contributed to this objective, first, by affirming that emissions trading will continue in the EU regardless of whether the UN climate change negotiations lead to agreement on the continuation of the Kyoto Protocol or its replacement by a new climate treaty in the post-2012 period. Second, the Package has also extended the carbon price signal by broadening the scope of the ETS both in terms of activities and greenhouse gases covered. Third, the Package has also increased long-term certainty concerning the scale of emission reductions required in the ETS sector by including in the Directive provisions on a linearly declining, EU-wide emissions cap. It has also improved transparency through new rules on the allocating of EUAs through auctioning and harmonised, EU-wide rules taking advantage of benchmarks. However, setting the price signal and emissions cap at the right level has proven difficult - without new measures for the third trading period, the effectiveness of the ETS in sending an adequate carbon price signal and promoting low-emissions investment is questionable. Binding emission reduction targets for Member States in sectors not covered by the ETS, through the Effort-sharing Decision, also contribute to external environmental integration (that is, climate mainstreaming in non-environmental sectors), as do measures to implement the 20% energy efficiency target. In addition, the tighter links between the EU climate policy and energy policy certainly contribute to climate change mainstreaming in several sectors.

Through the Package, the EU has also attempted to “increase positive and reduce negative impacts of climate change mitigation and adaptation measures on biodiversity”,³⁷¹ consistent with the internal dimension of environmental integration (environmental sustainability of the EU’s responses to climate change). The most obvious examples of internal environmental integration in the Package are the legal tools chosen to ensure the environmental sustainability of CCS projects and the sustainability criteria for biofuels. The CCS Directive is remarkable in that it is the first piece of legislation in the world aiming to create a legal framework for environmentally safe CCS projects. The Directive promotes internal integration through a set of CCS-specific environmental cautions, as well as links to other EU environmental legislation, such as the IPPC and EIA Directives, to ensure that broader environmental considerations are taken into account when using CCS to mitigate climate change. Concerning biofuels, as discussed above, the 10% renewable energy target in the transport sector was one of the most controversial element of the Package with strong concerns voiced concerning its environmental and social implications. This led to the inclusion in the Package of detailed sustainability criteria for both EU-produced and imported biofuels. The sustainability criteria provide a clear example of internal environmental integration as they attempt to ensure that the production of biofuels in the EU or in foreign countries does not lead to biodiversity loss,³⁷² while also achieving a minimum level of greenhouse gas emission savings,³⁷³ although environmental and social safeguards could have been much more ambitious.

The analysis of the Package through the lens of the environmental integration principle has thus helped to explain the EU’s efforts to play a global leadership role in the fight against climate change through its attempts to use the Package to influence multilateral negotiations, such as those under

³⁷⁰ According to the IPCC, “An effective carbon price signal could realize significant mitigation potential in all sectors.” See, “Summary for Policymakers” in Metz et al (Eds.), cited *supra* note 89, p. 19. According to the Stern Review, “The first essential element of climate change policy is carbon pricing. Greenhouse gases are, in economic terms, an externality: those who produce greenhouse gas do not face the full consequences of the cost of their actions themselves.” Stern, cited *supra* note 116, p. 349.

³⁷¹ This is an expression recently adopted by the CBD Conference of the Parties (Decision X/33, para 8(u), 2010).

³⁷² However, the outcome concerning indirect land-use change has been considered as weak. Phillips, “European Parliament capitulates on biofuels deal” *EuObserver* (5 Dec. 2008) <<http://euobserver.com/9/27236>> accessed 21 Feb. 2011.

³⁷³ For criticism of this approach, see conclusions by Vedder, cited *supra* note 17.

the CBD and Kyoto Protocol, in order to ensure that the international regimes reflect environmental integration. In addition, the EU clearly expects the Package to act as model for other countries on an individual basis, and plans to support this systematically through its bilateral external relations tools with partner third countries. Second, the Package provides interesting insights into the complex links between EU internal regulation and the EU's external relations. Outwardly, under the UNFCCC negotiations, the EU has frequently highlighted elements of the Package and encouraged other parties to adopt similar measures. Inwardly, the interdependence of the international and EU regulatory dimensions is also reflected in the way EU legislation is drafted with direct references to international instruments and notable review clauses in the Package linked to developments in ongoing international negotiations.³⁷⁴

The internationalizing approach to European law-making has also surfaced questions concerning the compatibility of parts of the Package with WTO law. This concerns especially provisions related to carbon leakage and the possible inclusion of energy-intensive imports under the EU ETS and the biofuels sustainability criteria in the Renewables Directive. The idea of requiring developing country importers to purchase credits under the ETS has also raised concerns over its compatibility with the principle of common but differentiated responsibilities under the UNFCCC. As discussed above, both concerns have been recognised by the Commission. It has been argued that EU's efforts to influence global developments through its internal environmental legislation can be seen as a strategy to shield EU law from WTO challenges by putting pressure on other jurisdictions to adopt similar environmental legislation and/or adopt corresponding international standards, thus protecting the competitive interests of European companies that have to comply with high-standard environmental regulation.³⁷⁵ However, another explanation is that for the EU to fulfil its environmental integration principle and its objective of pursuing global solutions to climate change, the main driver of the globalization of EU law is that of promoting holistic environmental multilateralism with the secondary effect of "running the risk" of WTO law incompatibility.³⁷⁶ The present analysis of the key elements of the Package (particularly concerning carbon leakage and sustainability criteria for biofuels) reveals how the EU carefully calculates such risk and attempts to avoid solutions that would be clearly incompatible with the WTO Agreements.

This article has also highlighted some of the complex and increasingly pronounced interactions between the EU's position under multilateral fora and its domestic legislation with its *bilateral* external relations. In other words, bilateral relations are used by the EU to support the implementation of multilateral environmental obligations in third countries (particularly developing ones), as well as to create or strengthen alliances with third countries with a view to influencing ongoing multilateral negotiations.³⁷⁷ This builds on the environmental cooperation clauses that can be found in the various Association, Cooperation and Partnerships Agreements concluded by the EU with third countries,³⁷⁸ which are usually coupled with significant development cooperation and

³⁷⁴ See, for example, Arts. 10b and 11a. of Directive 2009/29/EC, cited *supra* note 30, and Arts. 5.2, 5.3, 8 and 9 of Decision 406/2009/EC, cited *supra* note 34.

³⁷⁵ Kelemen, cited *supra* note 15.

³⁷⁶ Morgera, "Relevance Beyond Borders...", cited *supra* note 69, at 236.

³⁷⁷ For a detailed discussion, see Morgera and Marín Durán, *Environmental Integration in the EU External Relations*, cited *supra* note 305. In the specific context of climate change, see Piebalgs, European Commissioner for development, "ACP-EU Parliamentary Assembly" (Speech at the ACP-EU Parliamentary Assembly, Tenerife 29 Mar. 2010) <http://europa-eu-un.org/articles/en/article_9631_en.htm> accessed 10 Nov. 2010, where Piebalgs proposed increasing cooperation in the area of climate change under the ACP-EU framework, and increased policy dialogue on climate change, to better understand needs and expectations, share positions, and possibly promote convergence of visions ahead of the UN Climate Change Conference in Cancun, Mexico, at the end of 2010.

³⁷⁸ References to cooperation in the specific field of climate change can be found at: Art. 54, Partnership and Cooperation Agreement with Kazakhstan (28 Jul. 1999); and Art. 103, Stabilisation and Association Agreement with Croatia (28 Jan. 2005). Otherwise, more general cooperation clauses on global environmental issues or on the

policy dialogue.³⁷⁹ As pointed out in the previous sections, this bilateral external dimension is increasingly reflected in the way EU internal regulation is framed and implemented, as demonstrated by references to bilateral agreements and initiatives with third countries in the Package, in relation to climate funding and the expansion of the global carbon market under the EU ETS Directive, capacity building and collaborative research under the CCS Directive, joint projects under the Renewables Directive, and cooperation and monitoring on the biofuels sustainability criteria.

The overall conclusion is that the Package represents an innovative and comprehensive approach, aiming to integrate climate change considerations into various economic sectors and activities within the EU, while at the same time ensuring that climate change mitigation is compatible with other environmental objectives. Such an integrative approach is important given the scale of the economic and social transformation needed in the coming decades to avoid dangerous anthropogenic climate change. At the same time, it is clear that the targets underlying the Package are not ambitious enough to effectively combat climate change (more ambitious measures will be needed between now and 2050 for the EU to achieve its objective of cutting greenhouse gas emissions by 80-95% by 2050), to secure the environmental sustainability of climate change measures, or to achieve a radical transformation of the EU's economy. As explained above, the possibility of the EU increasing its emission reduction target from 20% to 30% from 1990 levels by 2020 is currently being debated. From the view point of EU internal regulation, a decision to implement the 30% target would require further policies and measures, as the Package in its present form is only designed to achieve the EU's unilateral 20% target. In this regard, the Commission is currently working on climate targets beyond 2050 and aims to publish a roadmap for a low-carbon economy in the spring of 2011.³⁸⁰ Equally, the legal tools deployed by the EU to prevent or minimize possible negative environmental impacts of climate change mitigation measures, such as the phased approach to the sustainability criteria for biofuels production, represent an initial step, that may well anticipate action by other countries, but that nonetheless remain limited. To this effect, the Package constitutes a starting point but deeper integration of climate change considerations into various economic sectors, coupled with stronger guarantees for the environmental sustainability of climate change measures, will be required. These challenges may thus imply that increased efforts will likely be exerted in the further refinement of EU climate law, in order to keep up the EU's role as a global leader, avoid WTO law-related challenges and creatively use the EU's external relations at the multilateral and bilateral level. EU environmental and general lawyers alike may wish to keep abreast of these legal experiments to better understand the evolving links between EU internal regulation and external action.

Dr. Kati Kulovesi

Post-Doctoral Researcher

implementation of Multilateral Environmental Agreements that parties to the Agreement are parties to can also serve this purpose.

³⁷⁹ Marín Durán and Morgera, "Towards environmental integration in the European Community's external relations? An analysis of selected association Agreements" 6 *YEEL* (2006), 179-210. In terms of climate-specific external initiatives of the EU, see Commission, EU Action Plan on Climate Change and Development, COM(2003) 85 final, 11 Mar. 2003; Commission, "Building a global climate change alliance between the European Union and poor developing countries most vulnerable to climate change," (Communication) COM(2007) 540 final, 18 Sept. 2007; and funding for both in the Thematic Programme for environmental and sustainable management of natural resources including energy – see European Commission, "External Action: Thematic Programme For Environment and Sustainable Management of Natural Resources including Energy", (Communication) COM(2006) 20 final, 25 Jan. 2006. For an overview, see Ayers, Huq and Chandani, "Assessing EU assistance for adaptation to climate change in developing countries: a Southern perspective" in Oberthür and Pallemmaerts (Eds.), cited *supra* note 11, pp. 231-250, especially at pp. 236-237.

³⁸⁰ Commission, Background note for public consultations: Roadmap for low carbon economy by 2050, <http://ec.europa.eu/clima/consultations/0005/background_info_en.pdf>, accessed 21 Feb. 2011. The public consultations were held from 27 October until 8 December 2010.

Department of Law
University of Eastern Finland
Joensuu campus
Yliopistokatu 2, Aurora B
FI-80101 JOENSUU, FINLAND
E-mail: kati.kulovesi@uef.fi

Dr. Elisa Morgera

Lecturer in European Environmental Law/ Director of the Master Programme in Global Environment and Climate Change Law
School of Law, University of Edinburgh
Old College, South Bridge, Edinburgh EH8 9YL, UK
Email: elisa.morgera@ed.ac.uk

Dr. Miquel Munoz

Postdoctoral Fellow, Frederick S. Pardee Center for the Study of the Longer-Range Future and Research Associate, Department of Geography and Environment, Boston University
Pardee House, 67 Bay State Road, Boston MA 02215, USA
E-mail: miquel@bu.edu